

### Special module on ICT at work, working conditions & learning digital skills: cognitive online-pretest

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## Special module on ICT at work, working conditions & learning digital skills

Cognitive Online-Pretest  
October-December 2016

*Katharina Meitinger, Cornelia Neuert, Clara Beitz,  
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## GESIS-Project Report

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## 1 Aims of the pretest

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The Pretest lab of GESIS Leibniz Institute for the Social Sciences (Germany) was assigned the task to conduct a cognitive online pretest of the special module on ICT at work, working conditions and learning digital skills by the European Commission. The main goals of this pretest were to support DG CONNECT in the context of developing a special module to feature in the 2018 EU survey on ICT usage in households and by individuals, help ensure robustness of the methodological approach and thus validity of potential responses, and to help to improve the formulation of questionnaire items to ensure an unambiguous understanding thereof.

GESIS tested a German and an English version of the module with German and British respondents (n=145, all employees or self-employed) in a web survey. In total, respondents received probes for 15 items. Some of the items do not need to be changed but the results indicate for several questions that the question wording, the answer values, or the German translations need to be improved. The pretest report includes recommendation to further refine the questions of the special module.

## 2 Sample

---

- Number of web respondents:** 145. Initially, the target sample size of this online-pretest was 120 respondents. Since several respondents did not provide sufficient responses to the open-ended question, we increased the sample size in order to compensate for these respondents.
- Target population:** This online-pretest was fielded in Great Britain and Germany. Half of the respondents were British (n=75), the other half were German (n=70). Due to the substantive topic of this pretest (ICT usage at work), the target population was employees and self-employed respondents.
- Selection of target population:** Quota sample.
- Quotas:** The selection of the target population was based on the following quota scheme:
- Age (18 to 65 years in three groups: 18 – 30; 31 – 50; 51 – 65); gender (male; female); education (lower; higher education).
- In addition, a minimum of 20 percent of respondents in each country was expected to be self-employed.

**Intended sample:**

British respondents:

| Age     | Education        | Female | Male | Total |
|---------|------------------|--------|------|-------|
| 18 – 30 | Lower education  | 5      | 5    | 10    |
| 18 – 30 | Higher Education | 5      | 5    | 10    |
| 31 – 50 | Lower education  | 5      | 5    | 10    |
| 31 – 50 | Higher Education | 5      | 5    | 10    |
| 51 – 65 | Lower education  | 5      | 6    | 10    |
| 51 – 65 | Higher Education | 5      | 6    | 10    |
| TOTAL   |                  | 30     | 30   | 60    |

German respondents

| Age     | Education        | Female | Male | Total |
|---------|------------------|--------|------|-------|
| 18 – 30 | Lower education  | 5      | 5    | 10    |
| 18 – 30 | Higher Education | 5      | 5    | 10    |
| 31 – 50 | Lower education  | 5      | 5    | 10    |
| 31 – 50 | Higher Education | 5      | 5    | 10    |
| 51 – 65 | Lower education  | 5      | 6    | 10    |
| 51 – 65 | Higher Education | 5      | 6    | 10    |
| TOTAL   |                  | 30     | 30   | 60    |



**Realized sample:**

## British respondents:

| Age     | Education        | Female | Male | Total |
|---------|------------------|--------|------|-------|
| 18 – 30 | Lower education  | 6      | 5    | 11    |
| 18 – 30 | Higher Education | 6      | 5    | 11    |
| 31 – 50 | Lower education  | 6      | 5    | 11    |
| 31 – 50 | Higher Education | 6      | 5    | 11    |
| 51 – 65 | Lower education  | 7      | 6    | 13    |
| 51 – 65 | Higher Education | 12     | 6    | 18    |
| TOTAL   |                  | 43     | 32   | 75    |

## German respondents

| Age     | Education        | Female | Male | Total |
|---------|------------------|--------|------|-------|
| 18 – 30 | Lower education  | 6      | 6    | 12    |
| 18 – 30 | Higher Education | 6      | 5    | 11    |
| 31 – 50 | Lower education  | 6      | 5    | 11    |
| 31 – 50 | Higher Education | 5      | 5    | 10    |
| 51 – 65 | Lower education  | 6      | 8    | 14    |
| 51 – 65 | Higher Education | 6      | 6    | 12    |
| TOTAL   |                  | 35     | 35   | 70    |

## Key characteristics of the British respondents:

| Respondent No. | Gender | Education | Age | Job description   | Self-Employed |
|----------------|--------|-----------|-----|---|---------------|
| 377            | Female | low       | 20  | Book-keeper, virtual assistant, social media manager and content writer | X             |
| 149            | Female | low       | 25  | Data manager  | -             |
| 379            | Female | low       | 25  | Wholesale trader  | X             |
| 174            | Female | low       | 26  | Packing organic food  | -             |
| 306            | Female | low       | 28  | Self-employed DJ/entertainer  | X             |
| 196            | Female | low       | 29  | Chef in nursing home  | -             |
| 368            | Female | low       | 31  | Writing   | X             |
| 384            | Female | low       | 35  | Project Manager   | X             |
| 425            | Female | low       | 38  | Sub-contractor  | X             |
| 385            | Female | low       | 44  | Education   | X             |
| 356            | Female | low       | 47  | Market trader   | X             |
| 301            | female | low       | 48  | Accounts clerk  | -             |
| 71             | female | low       | 58  | Employee at film production company                                     | X             |
| 85             | female | low       | 58  | Pet services  | X             |
| 118            | female | low       | 60  | Office manager  | -             |
| 72             | female | low       | 61  | Internet sales  | X             |
| 70             | female | low       | 62  | Sales   | -             |
| 119            | female | low       | 62  | Nursery and teaching assistant  | -             |
| 55             | female | low       | 63  | Property rentals  | X             |
| 162            | female | high      | 23  | Research assistant at a university (science sector)                     | -             |
| 220            | female | high      | 25  | Research assistant (for a company)                                      | -             |
| 420            | female | high      | 26  | Actor, teaching after-school arts lessons                               | X             |
| 240            | female | high      | 27  | Receptionist in a hotel   | -             |
| 362            | female | high      | 29  | Head of the office (of wholesale food distributors)                     | X             |
| 274            | female | high      | 30  | Conservation of artworks  | -             |
| 152            | female | high      | 33  | Administrator   | -             |
| 227            | female | high      | 35  | Administration manager  | -             |
| 121            | female | high      | 37  | Tutor   | X             |
| 157            | female | high      | 45  | Librarian within the NHS  | -             |
| 330            | female | high      | 46  | Trainer in human resources  | X             |

| Respondent No. | Gender | Education | Age | Job description                                    | Self-Employed |
|----------------|--------|-----------|-----|--|---------------|
| 337            | female | high      | 49  | Catering at music gigs                             | X             |
| 748            | female | High      | 51  | Landlord   | X             |
| 554            | female | High      | 52  | Customer service advisor                           | -             |
| 766            | female | High      | 52  | Shop keeper  | X             |
| 760            | female | High      | 55  | IT training officer                                | -             |
| 764            | female | High      | 55  | Teacher  | -             |
| 67             | female | High      | 57  | Counsellor   | X             |
| 543            | female | High      | 57  | Passenger assistant to special needs children      | -             |
| 755            | female | High      | 58  | HR manager, personal assistant to managing partner | -             |
| 757            | female | High      | 58  | Maths teacher                                      | -             |
| 751            | female | high      | 61  | Writer, editor, proofreader                        | X             |
| 752            | female | high      | 63  | Registered nurse                                   | -             |
| 763            | female | high      | 64  | Student support                                    | -             |
| 96             | male   | low       | 26  | Retailer   | -             |
| 99             | male   | low       | 28  | Manager  | -             |
| 144            | male   | low       | 28  | Barista  | -             |
| 108            | male   | low       | 29  | Software test engineer                             | -             |
| 129            | male   | low       | 30  | Managing director for professional services        | -             |
| 61             | male   | low       | 32  | Administrative assistant                           | -             |
| 50             | male   | low       | 35  | Manager  | -             |
| 269            | male   | low       | 37  | Manager  | -             |
| 48             | male   | low       | 43  | Security officer                                   | -             |
| 232            | male   | low       | 43  | HGV driver   | -             |
| 182            | male   | low       | 51  | Concrete quality technician, mix designer          | -             |
| 98             | male   | low       | 54  | Business manager                                   | -             |
| 136            | male   | low       | 54  | Project officer (social housing development)       | -             |
| 180            | male   | low       | 56  | Wood craftsman                                     | X             |
| 135            | male   | low       | 62  | PCV bus driver                                     | -             |
| 126            | male   | low       | 64  | Interim CIO  | X             |
| 345            | male   | high      | 23  | Professional dancer                                | X             |
| 295            | male   | high      | 25  | Public sector audit                                | -             |
| 226            | male   | high      | 27  | Consultant   | -             |

| Respondent No. | Gender | Education | Age | Job description                                    | Self-Employed |
|----------------|--------|-----------|-----|--|---------------|
| 141            | male   | high      | 30  | Database administrator                             | -             |
| 479            | male   | high      | 30  | n/a  | -             |
| 47             | male   | high      | 34  | Insurance broker                                   | -             |
| 106            | male   | high      | 36  | Global IT product manager                          | -             |
| 133            | male   | high      | 40  | Business owner                                     | X             |
| 140            | male   | high      | 41  | n/a  | -             |
| 173            | male   | high      | 46  | Academic researcher, head of research unit         | -             |
| 101            | male   | high      | 52  | Manager of payroll/finance                         | -             |
| 277            | male   | high      | 54  | Shop assistant                                     | -             |
| 122            | male   | high      | 59  | Support worker (adults with learning disabilities) | -             |
| 304            | male   | high      | 59  | Accountant in a large chemical company             | -             |
| 113            | male   | high      | 65  | Business psychologist                              | X             |
| 139            | male   | high      | 65  | Media designer for architecture practice           | -             |

**Key characteristics of the German respondents:**

| Respondent No. | Gender | Education | Age | Job description                                   | Self-employed |
|----------------|--------|-----------|-----|---|---------------|
| 514            | female | low       | 21  | Text writer                                       | X             |
| 125            | female | low       | 27  | Specialist in media and information services      | -             |
| 477            | female | low       | 27  | Service employee in a casino                      | -             |
| 450            | female | low       | 28  | Geriatric and health care assistant               | -             |
| 324            | female | low       | 30  | Artist  | X             |
| 355            | female | low       | 30  | Manager of automotive assessor agency             | X             |
| 132            | female | low       | 32  | Employee  | -             |
| 75             | female | low       | 37  | Geriatric care                                    | -             |
| 336            | female | low       | 38  | Plant photography                                 | X             |
| 350            | female | low       | 46  | Professional guardian                             | X             |
| 343            | female | low       | 49  | Data collection                                   | X             |
| 323            | female | low       | 50  | Retailer  | X             |
| 212            | female | low       | 51  | Sale and production (of handicrafts, gifts, etc.) | X             |

| Respondent No. | Gender | Education | Age | Job description                                     | Self-employed |
|----------------|--------|-----------|-----|---|---------------|
| 332            | female | low       | 54  | Freelance artist                                    | X             |
| 346            | female | low       | 55  | Courier driver                                      | X             |
| 115            | female | low       | 60  | Call centre agent                                   | -             |
| 349            | female | low       | 60  | Tradeswoman   | X             |
| 117            | female | low       | 61  | Bookseller  | -             |
| 112            | female | high      | 25  | Clerk   | -             |
| 154            | female | high      | 26  | Purchasing  | -             |
| 339            | female | high      | 26  | Pet sitter  | X             |
| 340            | female | high      | 26  | Self-employed producer and seller                   | X             |
| 326            | female | high      | 27  | Freelance literary fiction proofreader              | X             |
| 348            | female | high      | 28  | Fashion design                                      | X             |
| 94             | female | high      | 33  | Executive in an advertising agency                  | -             |
| 89             | female | high      | 38  | Teacher   | -             |
| 54             | female | high      | 43  | Preschool educator (in a daycare centre)            | -             |
| 87             | female | high      | 47  | Municipal office, administrative officer            | -             |
| 66             | female | high      | 48  | Civil servant                                       | -             |
| 77             | female | high      | 52  | Bookkeeper  | -             |
| 114            | female | high      | 54  | Communication services                              | X             |
| 109            | female | high      | 56  | Administrative officer                              | -             |
| 175            | female | high      | 59  | Employee with a laundry service                     | -             |
| 148            | female | high      | 60  | Entrepreneur  | X             |
| 176            | female | high      | 62  | Secretary (in a firm dealing with renewable energy) | -             |
| 81             | male   | low       | 20  | Cashier   | -             |
| 328            | male   | low       | 23  | Asset consultant                                    | X             |
| 482            | male   | low       | 26  | Event technology, electrical installation           | X             |
| 400            | male   | low       | 27  | Carer of dependent family members                   | X             |
| 452            | male   | low       | 28  | Water damage restoration                            | -             |
| 86             | male   | low       | 29  | Train operator                                      | -             |
| 51             | male   | low       | 31  | Bookkeeper  | -             |
| 130            | male   | low       | 32  | Web developer                                       | -             |
| 74             | male   | low       | 33  | Chef  | -             |
| 69             | male   | low       | 38  | Building construction worker                        | -             |

| Respondent No. | Gender | Education | Age | Job description   | Self-employed |
|----------------|--------|-----------|-----|---|---------------|
| 90             | male   | low       | 38  | Specialised nurse   | -             |
| 333            | male   | low       | 53  | Self-employed master baker  | X             |
| 325            | male   | low       | 54  | Bank clerk, financial adviser                                       | X             |
| 351            | male   | low       | 55  | Thai massage instructor   | X             |
| 181            | male   | low       | 56  | Bookkeeping   | -             |
| 329            | male   | low       | 56  | IT services   | X             |
| 354            | male   | low       | 56  | Managing director and owner of house-keeping services provider      | X             |
| 353            | male   | low       | 60  | Independent sales agent)  | X             |
| 97             | male   | low       | 65  | Supervisor  | -             |
| 161            | male   | high      | 23  | Coating lab technician  | -             |
| 164            | male   | high      | 24  | Procurer of office furniture  | -             |
| 107            | male   | high      | 25  | Customer service (for a cash-in-transit company)                    | -             |
| 91             | male   | high      | 28  | Bank clerk  | -             |
| 131            | male   | high      | 30  | Vehicle equipment   | -             |
| 158            | male   | high      | 31  | Research assistant  | -             |
| 155            | male   | high      | 34  | General clerical processing of calculations of exhibition stands    | -             |
| 93             | male   | high      | 43  | Controller (in an educational institution)                          | -             |
| 168            | male   | high      | 44  | Programmer  | -             |
| 116            | male   | high      | 47  | Tutor (in a private tuition institute)                              | -             |
| 165            | male   | high      | 51  | Parcel delivery service   | -             |
| 95             | male   | high      | 53  | Trainer   | X             |
| 142            | male   | high      | 56  | Mail-order sector   | X             |
| 172            | male   | high      | 56  | Service provider using own websites                                 | X             |
| 128            | male   | high      | 59  | Employed in a transportation service (for people with disabilities) | -             |
| 138            | male   | high      | 60  | Retail trader   | -             |

### 3 Methods

---

|                               |  |
|-------------------------------|--|
| Field time:                   | 20th of October to 3rd of November 2016  |
| Number of survey respondents: | 145  |
| Procedure:                    | Usage of an online-questionnaire with additional open and closed probing-questions (Web Probing) |
| Survey mode:                  | Web  |
| Cognitive techniques:         | General Probing, Comprehension Probing, Category Selection Probing, Specific Probing.            |
| Incentive for respondents:    | 1.50 €   |

## 4 Executive Summary

---

The GESIS Pretest Lab tested the following items of the special module (in English and German):

C6, C7, Q1, Q2, Q4e), Q5, Q6, Q7, Q8, Q9i), Q10, R1, R2

|                        |   |
|------------------------|---|
| <b>Question C6</b>     | <b>Have you used any website or app to arrange a transport service (e.g. by car) from another individual in the last 12 months?</b>   |
| <b>Probe 1</b>         | <p>In the previous question you answered that you used websites or apps to arrange a transport service from another individual.</p> <p>Which websites or apps did you have in mind when answering this question?</p>  |
| <b>Probe intention</b> | Probe 1 wanted to test whether respondents only think about services provided by individuals and do not mention commercial companies that provide similar services.   |
| <b>Results</b>         | Several respondents did not realize that the intention of the question was to ask about transport services provided by individuals.   |
| <b>Recommendations</b> | <p>Recommendation 1: Change sentence structure.</p> <p>Recommendation 2: Underline the term "another individual."</p> <p>Recommendation 3: Add an additional instruction.</p>   |
| <b>Question C7</b>     | <b>In the last 12 months, have you used any internet platform/app (e.g. Up-work, TaskRabbit, Amazon Mechanical Turk...) as an intermediary for you to obtain regular or occasional paid work to carry out in a self-employed capacity?</b>                          |
| <b>Probe 2</b>         | <p>In the previous question you answered that you have used an internet platform or app to obtain work.</p> <p>What platforms or applications did you consider when answering?</p>  |
| <b>Probe intention</b> | The goal of Probe 2 was to check whether the focus on platforms distributing bits of work is clear enough in question C7 and whether the phrasing of the question explicitly excludes traditional placement agencies (e.g., private or public employment services). |
| <b>Results</b>         | <p>English version: British respondents did not mention traditional placement agencies.</p> <p>German version: Too complex sentence structure.</p>  |
| <b>Recommendations</b> | <p>Solution 1: Ask two questions in the German version.</p> <p>Solution 2: Simplify German sentence structure.</p>  |



|                         |  |
|-------------------------|--|
| <b>Question Q1</b>      | <p>The following questions concern the usage of information and communication technologies (computers and the internet) for your working activities. In case of multiple activities, please refer always to your main paid job.</p> <p><b>Think about your main paid job: Do you use computers, laptops, smartphones, or other computerised equipment at work?</b></p>   |
| <b>Probe 4</b>          | <p>In one of the previous questions we asked about computerised equipment.</p> <p>Which tools do you consider to be computerised equipment?</p>  |
| <b>Probe intention</b>  | The intention of Probe 4 was to assess the respondents' understanding of the term "other computerised equipment."  |
| <b>Results</b>          | Several respondents in both countries struggle with and silently misunderstand the term "computerised equipment."  |
| <b>Recommendations</b>  | <p>Solution 1: Replace the term "computerised equipment."</p> <p>Solution 2: Provide a definition of "computerised equipment."</p> <p>Additional recommendation: Substitute the term "Hauptberuf" with the term "Hauptbeschäftigung" in the German version.</p>  |
| <b>Question Q2</b>      | <b>How often do you actively use such equipment at work?</b>   |
| <b>Probe 3 (closed)</b> | <p>How often do you actively use the following devices for working activities?</p> <p>Answer options: Daily – Less than daily – Never</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Desktop computers</li> <li><input type="checkbox"/> Laptops</li> <li><input type="checkbox"/> Tablets</li> <li><input type="checkbox"/> Smartphones</li> <li><input type="checkbox"/> Other</li> </ul> |
| <b>Probe intention</b>  | The intention of Probe 3 was to gain an understanding of the extent of digital technologies usage at work and to clarify the role of portable devices.   |
| <b>Results</b>          | Respondents most often work with desktop computers, laptops, and Smartphones and least frequently with tablets.  |
| <b>Recommendations</b>  | The term "at work" is too vague. Substitute this term with "for working activities."   |

|                        |   |
|------------------------|---|
| <b>Question Q4e)</b>   | How often have the following activities been part of your main paid job, in the last 12 months?<br><br>e) Enter data into business software or databases (e.g. for customer relations management)                 |
| <b>Probe 5</b>         | In the previous question you answered that you enter data into business software or databases (e.g. for customer relations management).<br><br>Could you please explain your tasks in this context a bit further? |
| <b>Probe intention</b> | The intention of Probe 5 was to evaluate whether respondents perceive this task as a relatively basic skill.  |
| <b>Results</b>         | Respondents mention a variety of tasks with different skill levels.   |
| <b>Probe 6</b>         | The intention of Probe 6 was to check what is perceived as not covered by the answer options a) to k) and whether additional items need to be added.  |
| <b>Results</b>         | Most respondents from both countries indicated that they could not think of any further digital activities.   |
| <b>Recommendations</b> | The question text in German differs from the English source question. Please delete the term "internet" in the German version.  |
| <b>Question Q5</b>     | In the last 12 months, did you have to learn how to use new software (programmes and applications)?   |
| <b>Probe 7</b>         | Please describe the new software (programmes and applications) you had to learn.  |
| <b>Probe intention</b> | The research intention of Probe 7 was to ensure that the wording is unambiguous enough.   |
| <b>Results</b>         | Overall, the respondents seem to have understood the question correctly.  |
| <b>Recommendations</b> | No changes recommended.   |
| <b>Question Q6</b>     | In the last 12 months, have the main tasks of your job changed as a result of the introduction of new software (programmes and applications)?   |
| <b>Probe 8</b>         | Could you please tell us how you felt about these changes?  |
| <b>Probe intention</b> | The intention of Probe 8 was to check which type of changes respondents have in mind when answering question Q6 and how the organisational changes are perceived by the respondents.                              |
| <b>Results</b>         | Respondents had positive, negative, and mixed emotions with regard to these changes.  |
| <b>Recommendations</b> | No changes recommended.   |

|                        |   |
|------------------------|---|
| <b>Question Q7</b>     | <b>Over the past year, have you been involved in choosing, improving or otherwise modifying the software (programmes and applications) used for work in your department or organisation?</b>  |
| <b>Probe 9</b>         | Please describe how you have been involved in the selection, improvement or modification of the software programmes or applications used for work in your department or organisation?   |
| <b>Probe intention</b> | The intention of Probe 9 was to reveal what respondents understand as involvement in software changes.  |
| <b>Results</b>         | The phrasing of the question allows for a large scope of interpretation.  |
| <b>Recommendations</b> | <p>Question: We recommend narrowing the scope of this question by providing examples.</p> <p>Answer categories: For the German version, please replace the answer category "Nicht relevant" with either "Keine Nutzung von Software (Programme und Anwendungen) in meiner Abteilung/Organisation" or "Für meine Abteilung/Organisation nicht relevant" in the German version.</p> |
| <b>Question Q8</b>     | <b>Which of the following statements would best describe your digital skills at work?</b>   |
| <b>Probe 10</b>        | What skills do you consider to be digital skills?   |
| <b>Probe intention</b> | The intention of Probe 10 was to check whether the term 'digital skills' is consistently understood by all respondents.   |
| <b>Results</b>         | <p>Respondents seem to associate a variety of different skills with the term 'digital skills.'</p> <p>'Digital skills' is a vague term.</p>   |
| <b>Recommendations</b> | The term 'digital skills' needs to be further specified.  |

|                          |  |
|--------------------------|--|
| <b>Question Q9</b>       | <b>In the last 12 months, did the usage of computers, laptops, smartphones, or other computerised equipment at work increase or reduce any of the following job characteristics, if any?</b> |
| <b>Probe 11</b>          | <p>You answered that the usage of computers etc. increased/decreased the amount if irregular working hours.</p> <p>Please explain your answer a little further. Why did you select it?</p>   |
| <b>Probe intention</b>   | The intention of Probe 11 was to test whether respondents understand Q9 correctly.   |
| <b>Results</b>           | The respondents seem to understand this question.  |
| <b>Recommendations</b>   | <p>We suggest the following changes for the German version:</p> <p>Suggestion 1: Change the syntax</p> <p>Suggestion 2: Replace the term "Stellenmerkmale" with "Arbeitsplatzmerkmale."</p>  |
| <b>Question Q10</b>      | <b>In the last 12 months, did the usage of computers, laptops, smartphones, or other computerised equipment have a positive or a negative effect on your work-life balance, if any?</b>      |
| <b>Probe 12 &amp; 13</b> | Please describe the most important positive/negative changes you have experienced thanks to the usage of computers or similar devices.   |
| <b>Probe intentions</b>  | The intention of Probe 12 & 13 was to check whether what was perceived as positive/negative changes by respondents is included in the scope of the answer options of questions Q9 and Q10.   |
| <b>Results</b>           | The probe results potentially indicated that respondents do not answer the question with regard to their work-life balance.  |
| <b>Recommendations</b>   | Please underline the term 'work-life balance' in the question.   |

|                        |  |
|------------------------|--|
| <b>Question R1</b>     | <b>Have you undergone any of the following learning activities to improve your digital skills during the past 12 months?</b>   |
| <b>Probe 14</b>        | In the previous list, did you miss any further relevant type of learning activities that you have undertaken? If so, please describe them.                                 |
| <b>Probe intention</b> | The intention of Probe 14 was to assess whether question R1 captures the full range of possible learning activities and to evaluate whether any activities are missing.    |
| <b>Results</b>         | The list of learning activities of question R1 seems to be exhaustive but answer category R1e) might have a too narrow scope.  |
| <b>Recommendations</b> | We recommend deleting the term "free" to increase the scope of this category.<br>Please replace the term "Bildungskurse" with "Weiterbildungskurse" in the German version. |

|                        |   |
|------------------------|---|
| <b>Question R2</b>     | <b>In which of the following domains did you undertake the training?</b>  |
| <b>Probe 15</b>        | The training you have undertaken did not match any of the domains listed in the previous question.<br><br>Please describe the type of training you took.              |
| <b>Probe intention</b> | Probe 15 had the goal to assess whether the proposed answer options of question R2 are well understood and to evaluate whether they cover the majority of real cases. |
| <b>Results</b>         | There seem to be several domains that are not covered by the list of question R2.   |
| <b>Recommendations</b> | We recommend including an open-ended "other" answer category (other, please specify: ____).   |

## 5 Results

Tested question:

English version:

**C6. Have you used any website or app to arrange a transport service (e.g. by car) from another individual in the last 12 months?**

*Please tick all that apply or 'No, I have not'*

☐ Yes, dedicated websites or apps (e.g. UBER, Blabla car)

☐ Yes, other websites or apps (including social networks)

☐ No, I have not.

German version:

**C6. Haben Sie in den letzten 12 Monaten eine Website oder App genutzt, um eine Fahrdienstleistung (z. B. mit dem Auto) bei einer anderen Privatperson zu buchen?**

*Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten bzw. ‚Nein‘ an.*

☐ Ja, über eine darauf spezialisierte Internetseite oder App (z.B. UBER, Blablacar)

☐ Ja, andere Internetseiten oder Apps (inklusive sozialer Netzwerke)

☐ Nein.

### Frequency distribution of English speaking respondents (N=75)

| Answer English version                                  | No. of respondents | %     |
|---|--------------------|-------|
| Yes, dedicated websites or apps (e.g. UBER, Blabla car) | 19                 | 25.33 |
| Yes, other websites or apps (including social networks) | 13                 | 17.33 |
| No, I have not.   | 49                 | 65.33 |
| Nonresponse   | -                  | -     |

### Frequency distribution of German speaking respondents (N=70)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| Ja, über eine darauf spezialisierte Internetseite oder App (z.B. UBER, Blablacar) | 5                  | 7.14  |
| Ja, andere Internetseiten oder Apps (inklusive sozialer Netzwerke)                | 4                  | 5.71  |
| Nein.   | 61                 | 87.14 |
| Antwortverweigerung   | -                  | -     |

### Cognitive techniques:

Specific Probing.

Probe 1: English version:

In the previous question you answered that you used websites or apps to arrange a transport service from another individual.

**Which websites or apps did you have in mind when answering this question?**

Probe1: German version:

Sie haben in der vorherigen Frage angegeben, dass Sie Websites oder Apps genutzt haben, um bei einer anderen Privatperson eine Fahrdienstleistung zu buchen.

**An welche Websites oder Apps haben Sie bei der Beantwortung der Frage gedacht?**

**Intention:** The aim of Probe 1 was to assess whether respondents understand question C6 as intended by the questionnaire designers. Question C6 asked the respondents to report whether they have used any website or app to arrange a transport service from **another individual** in the last 12 months. By asking the respondents which websites or apps the respondents had in mind when answering question C6, Probe 1 wanted to test whether respondents only think about services provided by individuals and do not mention commercial companies that provide similar services.

### Findings:

Question C6 asked respondents whether they have used any website or app to arrange a transport service (e.g. by car) from another individual in the last 12 months. Respondents could choose between the answer categories "Yes, dedicated websites or apps (e.g. UBER, Blabla car)," "Yes, other websites or apps (including social networks)," and "No, I have not." It was possible to select both the first and the second answer options at the same time but the last response category ("No, I have not") was an exclusive category. Due to the possibility to select multiple categories, percentages do not necessarily add up to 100 percent. The first answer category ("Yes, dedicated websites or apps [e.g. UBER, Blabla car]") was selected by 25.33 percent of the English speaking respondents and 7.14 percent of the German speaking respondents. The second answer category ("Yes, other websites or apps [including social networks]") was chosen by 17.33 of the English speaking respondents and by 5.71 percent of the German speaking respondents. However, most of the respondents in both countries indicated that they have not used websites or apps to arrange a transport service from another individual (65.33 percent of English speaking respondents and 87.14 of German speaking respondents).

Only respondents that chose the answer categories "Yes, dedicated websites or apps (e.g. UBER, Blabla car)" or "Yes, other websites or apps (including social networks)" at question C6 received a specific probe that asked respondents which websites they had in mind when answering this question. Respondents that chose the answer category "No, I have not." (n=110) did not receive this probe. As a consequence, 35 respondents (26 British and 9 German respondents) answered this probing question.

The intention of Probe 1 was to verify whether respondents only think about services provided by individuals and do not mention commercial companies that provide similar services.

The table below summarizes all websites and apps which respondents wrote in their probe answers in alphabetical order. Most of the British respondents (12 respondents) mentioned Uber and most of the Germans (5 respondents) referred to Blabla car. This is not a surprising response pattern because Uber provides its services in Germany only in large cities, such as Berlin. In addition, respondents in both countries thought about commercial websites that also offer forums to arrange a transport service from another individual. In Germany, ADAC and Deutsche Bahn provide such a service and British respondents used, for example, Trip Advisor. In both countries, respondents also used facebook to find transport services (1 British and 1 German respondent).

However, respondents also mentioned websites from **commercial companies** that provide transportation services or travel arrangements in general. This was the case for one German respondent (Sixt) and at least eight British respondents. In this context, respondents named companies such as Booking.com, British Airways, Ryanair, Trainline, or TFL. These respondents misunderstood this question and answered the question whether they use websites to arrange a transport service in general and not necessarily from an individual.

| Websites                   | British respondents (n=26) | German respondents (n=9) |
|----------------------------|----------------------------|--------------------------|
| ADAC                       | -                          | 1                        |
| Addison Lee                | 1                          | -                        |
| Alpha                      | 1                          | -                        |
| Blabla car                 | -                          | 5                        |
| <i>Booking.com</i>         | 1                          | -                        |
| <i>British Airways</i>     | 1                          | -                        |
| <i>Deutsche Bahn</i>       | -                          | 1                        |
| <i>Facebook</i>            | 1                          | 1                        |
| <i>Google</i>              | 1                          | -                        |
| <i>Kabbee</i>              | 1                          | -                        |
| <i>KDS</i>                 | 1                          | -                        |
| Local Taxi                 | 1                          | -                        |
| Red Spotted Hanky          | 1                          | -                        |
| Ryanair Transfer           | 1                          | -                        |
| Sixt                       | -                          | 1                        |
| TFL (Transport for London) | 2                          | -                        |
| Travel Agent Site          | 1                          | -                        |
| Trainline                  | 1                          | -                        |
| Tripadvisor                | 1                          | -                        |
| Uber                       | 12                         | -                        |



**Recommendations:****Question:**

The general issue of this question is that several respondents did not realize that the intention of the question was to ask about transport services provided by **individuals**. Therefore, it is necessary to make it more obvious that the question focus is on individuals and not commercial companies.

One solution might be to change the sentence structure: "In the last 12 months, have you used any website or app from another individual to arrange a transport service (e.g. by car)?"

In addition, it might be helpful to underline the term "another individual" in the sentence: "In the last 12 months, have you used any website or app to arrange a transport service from another individual (e.g. by car)?"

Finally, to clarify that the question inquires only about apps or websites that offer transportation services from individuals, we would recommend to make the intention more clear with an additional instruction: "This does not include commercial companies, e.g., car rental companies."

**Answer categories:**

No changes recommended.

**Tested question:**

English version:

- C7.** In the last 12 months, have you used any internet platform/app (e.g. Upwork, TaskRabbit, Amazon Mechanical Turk...) as an intermediary for you to obtain regular or occasional paid work to carry out in a self-employed capacity?
- ☐ Yes, as my main job
- ☐ Yes, as a secondary or occasional job
- ☐ No, never

German version:

- C7.** Haben Sie in den letzten 12 Monaten eine Internet-Plattform / App (z.B. Upwork, TaskRabbit, Amazon Mechanical Turk) als Vermittler genutzt, um für Sie selbst in einer selbstständigen Erwerbstätigkeit regelmäßig oder gelegentlich ausgeführte, bezahlte Arbeit zu erhalten?
- ☐ Ja, in meiner Hauptbeschäftigung
- ☐ Ja, als Neben- oder Gelegenheitsjob
- ☐ Nein, nie

**Frequency distribution of English speaking respondents (N=75)**

| Answer English version                | No. of respondents | %     |
|---------------------------------------|--------------------|-------|
| Yes, as my main job                   | 4                  | 5.33  |
| Yes, as a secondary or occasional job | 10                 | 13.33 |
| No, never                             | 61                 | 81.33 |
| <i>Nonresponse</i>                    | -                  | -     |

**Frequency distribution of German speaking respondents (N=70)**

| Answer German version               | No. of respondents | %     |
|-------------------------------------|--------------------|-------|
| Ja, in meiner Hauptbeschäftigung    | 2                  | 2.86  |
| Ja, als Neben- oder Gelegenheitsjob | 3                  | 4.29  |
| Nein, nie                           | 65                 | 92.86 |
| <i>Antwortverweigerung</i>          | -                  | -     |

**Cognitive techniques:**

Specific Probing.

Probe 2: English version:

In the previous question you answered that you have used an internet platform or app to obtain work.

**What platforms or applications did you consider when answering?**

Probe 2: German version:

Sie haben in der vorherigen Frage angegeben, dass Sie Internet-Plattformen oder Apps genutzt haben, um bezahlte Arbeit zu erhalten.

**An welche Internet-Plattformen oder Apps haben Sie bei der Beantwortung der Frage gedacht?**

#### Intention:

The goal of Probe 2 was to check whether the focus on platforms distributing bits of work is clear enough in question C7. In particular, Probe 2 wants to assess whether the phrasing of the question explicitly excludes traditional placement agencies (e.g., private or public employment services).

#### Findings:

Question C7 asked respondents whether they have used any internet platform/app (e.g. Upwork, TaskRabbit, Amazon Mechanical Turk) as an intermediary to obtain regular or occasional paid work to carry out in a self-employed capacity in the last 12 months. Respondents could choose between the answer categories "Yes, as my main job," "Yes, as a secondary or occasional job," and "No, never." All categories were exclusive categories and, therefore, percentages add up to 100 percent. The first answer category ("Yes, as my main job") was selected by 5.33 percent of the English speaking respondents and 2.86 percent of the German speaking respondents. The second answer category ("Yes, as a secondary or occasional job") was chosen by 13.33 of the English speaking respondents and by 4.29 percent of the German speaking respondents. However, most of the respondents in both countries indicated that they have not used any internet platform/app as an intermediary to obtain regular or occasional paid work to carry out in a self-employed capacity in the last 12 months (81.33 percent of English speaking respondents and 92.86 of German speaking respondents).

Only respondents that chose the answer categories "Yes, as my main job" or "Yes, as a secondary or occasional job" at question C7 received a specific probe that asked respondents what platforms or applications they had considered when answering this question. Respondents that chose the answer category "No, I have not." (n=126) did not receive this probe. As a consequence, 19 respondents (14 British and 5 German respondents) answered this probing question.

The intention of the probe was to verify whether the focus of the question on platforms distributing work orders is clear enough and whether the phrasing clearly excludes traditional placement agencies. The probe responses of the British respondents seem to indicate that this intention is met for the English version of this question. British respondents mentioned a variety of different platforms and apps to find work, such as "Upwork," "TaskRabbit," or "Glasdoor." Most of these platforms and apps were only mentioned by one respondent (with the exception of "Upwork" and "TaskRabbit." These platforms were indicated twice). More importantly, British respondents did not mention traditional placement agencies.

However, only a few German respondents received this probe (n=5) and only two websites are mentioned. This can mean two things: Either German respondents really do not obtain work through internet platforms or German respondents had problems with the question wording. Given the complex sentence structure of the German translation of the closed question, the latter interpretation (problems with the question) seems more likely.

| Websites                     | British<br>respondents<br>(n=14) | German<br>respondents<br>(n=5) |
|------------------------------|----------------------------------|--------------------------------|
| Clickworker                  | -                                | 1                              |
| Ebay                         | 1                                | -                              |
| Glasdoor                     | 1                                | -                              |
| Google                       | 1                                | -                              |
| Greatcontent                 | 1                                | -                              |
| Hirewriters                  | 1                                | -                              |
| Indeed                       | 1                                | -                              |
| Jobs                         | 1                                | -                              |
| Jobsite (App)                | 1                                | -                              |
| Kleiderkreisel               | -                                | 1                              |
| Mingle                       | 1                                | -                              |
| Professional website testing | 1                                | -                              |
| Pureprofile                  | 1                                | -                              |
| Reed                         | 1                                | -                              |
| Star Now                     | 1                                | -                              |
| Talent Cast                  | 1                                | -                              |
| TaskRabbit                   | 2                                | -                              |
| Ubr                          | 1                                | -                              |
| Upwork                       | 2                                | -                              |
| What u                       | 1                                | -                              |
| Unusable responses           | 1                                | 3                              |

## Recommendations:

**Question:** For the German version, we would recommend splitting the question in two separate questions because it is asking multiple questions: 1) Did the respondents use the internet? 2) For which type of job? In order to reduce the complexity of the question it is necessary to ask these questions separately in the German version:

### Question 1:

"Haben Sie in den letzten 12 Monaten eine Internet-Plattform / App (z.B. Upwork, TaskRabbit, Amazon Mechanical Turk) genutzt, um nach Arbeit zu suchen?"

- ☐ Ja
- ☐ Nein

### Question 2 (if selected "Ja"):

"Um was für eine Art der Beschäftigung handelte es sich dabei?"

- ☐ Meine Hauptbeschäftigung
- ☐ Einen Neben- oder Gelegenheitsjob

An alternative solution would be to simplify the sentence structure and to first ask the main question and then provide any definition or examples afterwards:

"Haben Sie in den letzten 12 Monaten eine Online-Vermittlungsplattform / App genutzt, um neben- oder hauptberuflich einer bezahlten Erwerbstätigkeit nachzugehen?"

Beispiele für Online-Vermittlungsplattformen sind Upwork, TaskRabbit oder Amazon Mechanical Turk."

In a similar vein, we recommend adapting the English version accordingly:

"In the last 12 months, have you used any internet platform/app as an intermediary for you to obtain regular or occasional paid work to carry out in a self-employed capacity?"

Examples for internet platforms/apps are Upwork, TaskRabbit, Amazon Mechanical Turk."

**Answer categories:** No changes recommended.

**Tested question:**

English version:

**Q1.** The following questions concern the usage of information and communication technologies (computers and the internet) for your working activities. In case of multiple activities, please refer always to your main paid job.

Think about your main paid job: Do you use computers, laptops, smartphones, or other computerised equipment at work?

☐ Yes

☐ No

German version:

**Q1.** Die folgenden Fragen beziehen sich auf die Nutzung von Informations- und Kommunikationstechnologien (Computer und Internet) für Ihre beruflichen Aktivitäten. Im Fall von mehreren Aktivitäten beziehen Sie sich bitte immer auf Ihren Hauptberuf.

Denken Sie an Ihre Hauptbeschäftigung: Verwenden Sie Computer, Laptops, Smartphones oder andere computergesteuerte Ausstattung bei der Arbeit?

☐ Ja

☐ Nein

**Frequency distribution of English speaking respondents (N=75)**

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| Yes                    | 61                 | 81.33 |
| No                     | 14                 | 18.67 |
| <i>Nonresponse</i>     | -                  | -     |

**Frequency distribution of German speaking respondents (N=70)**

| Answer German version | No. of respondents | %     |
|-----------------------|--------------------|-------|
| Ja                    | 58                 | 82.86 |
| Nein                  | 12                 | 17.14 |
| <i>Nonresponse</i>    | -                  | -     |

**Cognitive techniques:**

Comprehension Probing.

Probe 4: English version:

In one of the previous questions we asked about computerised equipment.

**Which tools do you consider to be computerised equipment?**

Probe 4: German version:

In einer der vorherigen Fragen haben wir Sie nach computergesteuerter Ausstattung und Geräten gefragt.

**An was für Gerätschaften denken Sie bei "computergesteuerter Ausstattung und Geräten"?**

#### Intention:

The intention of Probe 4 was to assess the respondents' understanding of the term "other computerised equipment." The term "computerized equipment" was included in the question text of question Q1. However, the questionnaire designer wanted to know how this term is understood and which type of devices respondents include (e.g., machines connected to the internet, handheld devices to register orders in restaurant or signatures, etc.).

#### Findings:

Question Q1 asked respondents whether they use computers, laptops, smartphones, or other computerised equipment at work in their main job. Respondents could choose between the answer categories "Yes" and "No." All categories were exclusive categories and, therefore, percentages add up to 100 percent. The majority of British and German respondents selected the answer category "Yes" (British respondents: 81.33 percent; German respondents: 82.86 percent). Only 18.67 percent of the British respondents and 17.14 percent of the German respondents chose "No" at this question.

Only respondents that selected the response "Yes" at Q1 received the comprehension probe that inquired which tools respondents would consider to be "computerised equipment". As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1.

The main intention of Probe 4 was to get a better understanding how the term "computerised equipment" is understood by the respondents and which type of devices the respondents include in their definition of "computerised equipment." The comprehension probe revealed a large variety of different interpretations of the term "computerized equipment." Respondents in both countries thought of various devices, office tools, computer equipment, production facilities, and entertainment devices. Therefore, the first finding with regard to this probe is that respondents do not associate one specific type of device with the term "computerized equipment."

However, the most important distinction with regard to the probe findings is whether respondents' associations are "in scope" or "out of scope." The term computerized equipment was defined as equipment used, for example, to control machines or to access the internet (e.g., machines connected to the internet, handheld devices to register signatures or orders in restaurants, etc.). Following this definition, only a minority of respondents mentioned "in scope" devices, such as hand-held scanners (German respondents: 3.45 percent), card readers (German respondents: 1.72 percent), label maker readers (German respondents: 1.72 percent), or machines/robots (German respondents: 6.90 percent). Some respondents did not provide specific devices but circumscribed such devices by providing definitions

such as devices that require batteries (British respondents: 3.28 percent) or an internet connection (British respondents: 4.92 percent), devices that are computer-controlled (German respondents: 5.17 percent) or devices that work like a computer (British respondents: 3.28 percent, German respondents: 3.45 percent).

Unfortunately, several respondents also provided "out of scope" definitions of the term "computerized equipment," by mentioning devices such as desktop computers (British respondents: 60.66 percent, German respondents: 13.79 percent), laptops (British respondents: 55.74 percent, German respondents: 3.45 percent), smartphones (British respondents: 37.70 percent, German respondents: 8.62 percent) or tablets (British respondents: 27.87 percent, German respondents: 6.90 percent). However, the prevalence of these "out of scope" definitions varies across countries. Far more British respondents than German respondents associate "computerized equipment" with such devices. This means that the German translation potentially captures the intended meaning of this term more clearly. In contrast, about 17 percent of the German respondents answer that they do not understand this technical term.

| Computerised equipment at work | British respondents (n=61) (%) | German respondents (n=58) (%) |
|--------------------------------|--------------------------------|-------------------------------|
| <b>Devices</b>                 |                                |                               |
| Desktop computer               | 37 (60.66)                     | 8 (13.79)                     |
| Laptop                         | 34 (55.74)                     | 2 (3.45)                      |
| Smartphone                     | 23 (37.70)                     | 5 (8.62)                      |
| Tablet                         | 17 (27.87)                     | 4 (6.90)                      |
| Phablet                        | 1 (1.64)                       | -                             |
| Watch                          | 1 (1.64)                       | 1 (1.72)                      |
| Hand-held scanner              | -                              | 2 (3.45)                      |
| Card reader                    | -                              | 1 (1.72)                      |
| Label maker                    | 1 (1.64)                       | 1 (1.72)                      |
| <b>Office tools</b>            |                                |                               |
| Printer                        | 5 (8.20)                       | 10 (17.24)                    |
| Scanner                        | 2 (3.28)                       | 7 (12.07)                     |
| Copy machine                   | -                              | 1 (1.72)                      |
| Fax                            | 2 (3.28)                       | 2 (3.45)                      |
| Whiteboard                     | -                              | 1 (1.72)                      |
| <b>Computer equipment</b>      |                                |                               |
| Screen                         | 1 (1.64)                       | -                             |
| Mouse                          | 1 (1.64)                       | 2 (3.45)                      |
| Keyboard                       | 1 (1.64)                       | -                             |
| Loud speaker                   | -                              | 1 (1.72)                      |



|   |          |            |
|---|----------|------------|
| Web cam   | -        | 1 (1.72)   |
| Microphone  | -        | 1 (1.72)   |
| <b>Production facilities (e.g., machines, robots)</b> | -        | 4 (6.90)   |
| <b>Entertainment devices</b>                          |          |            |
| iPod  | 1 (1.64) | -          |
| eReader   | 1 (1.64) | -          |
| Internet enabled television                           | 1 (1.64) | 1 (1.72)   |
| Gaming devices  | 2 (3.28) | -          |
| Digital camera  | 2 (3.28) | -          |
| <b>Further devices</b>                                |          |            |
| GPS   | -        | 1 (1.72)   |
| Smarthome   | -        | 2 (3.45)   |
| <b>Broad definitions</b>                              |          |            |
| Devices that require batteries                        | 2 (3.28) | -          |
| Devices that require internet                         | 3 (4.92) | -          |
| Computer-controlled devices                           | 0        | 3 (5.17)   |
| Devices that work like a computer                     | 2 (3.28) | 2 (3.45)   |
| <b>Specific brands (e.g., Apple, Samsung)</b>         | 1 (1.64) | 3 (5.17)   |
| <b>Nonresponse</b>                                    |          |            |
| No specific device                                    | -        | 2 (3.45)   |
| Don't know  | 1 (1.64) | 10 (17.24) |
| Refusal   | 1 (1.64) | 3 (5.17)   |

### Recommendations:

#### Question:

The issue of question Q1 is that several respondents in both countries struggle with and silently misunderstand the term "computerised equipment." Therefore, we recommend substituting the term "computerised equipment" with a different term that captures the intended devices more clearly. Another solution would be to provide a definition of computerised equipment.

In addition, we recommend substituting the term "Hauptberuf" with the term "Hauptbeschäftigung" in the German version of the question. The term "Hauptberuf" does not really exist in the German language: "Die folgenden Fragen beziehen sich auf die Nutzung von Informations- und Kommunikationstechnologien (Computer und Internet) für Ihre beruflichen Aktivitäten.

Im Fall von mehreren Aktivitäten beziehen Sie sich bitte immer auf Ihre Hauptbeschäftigung.

Denken Sie an Ihre Hauptbeschäftigung: Verwenden Sie Computer, Laptops, Smartphones oder andere computergesteuerte Ausstattung bei der Arbeit?"

Answer categories: No changes recommended.

**Tested question:**

English version:

**Q2. How often do you actively use such equipment at work?***Please tick one*

- ☐ Every day or almost every day  
☐ At least once a week (but not every day)  
☐ Less than once a week

German version:

**Q2. Wie oft nutzen Sie diese Geräte bei der Arbeit?***Bitte kreuzen Sie nur eine Antwortmöglichkeit an*

- ☐ Jeden Tag oder fast jeden Tag  
☐ Mindestens einmal pro Woche (aber nicht jeden Tag)  
☐ Weniger als einmal pro Woche

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version                   | No. of respondents | %     |
|--|--------------------|-------|
| Every day or almost every day            | 57                 | 93.44 |
| At least once a week (but not every day) | 4                  | 6.56  |
| Less than once a week                    | -                  | -     |
| <i>Nonresponse</i>                       | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version                              | No. of respondents | %     |
|--|--------------------|-------|
| Jeden Tag oder fast jeden Tag                      | 50                 | 86.21 |
| Mindestens einmal pro Woche (aber nicht jeden Tag) | 8                  | 13.79 |
| Weniger als einmal pro Woche                       | -                  | -     |
| <i>Antwortverweigerung</i>                         | -                  | -     |

**Cognitive techniques:**

Specific Probing (Closed).

**Probe 3: English version**

How often do you actively use the following devices for working activities?

Answer options: Daily – Less than daily – Never

- ☐ Desktop computers
- ☐ Laptops
- ☐ Tablets
- ☐ Smartphones
- ☐ Other

**Probe 3: German version**

Wie häufig nutzen Sie aktiv die folgenden Geräte für Arbeitsaufgaben?

Antwortoptionen: Täglich – Nicht jeden Tag – Nie

- ☐ Desktop-Computer
- ☐ Laptop
- ☐ Tablet
- ☐ Smartphone
- ☐ Andere

**Intention:**

The intention of Probe 3 was to gain an understanding of the extent of digital technologies usage at work and to clarify the role of portable devices which respondents have with them the majority of time but that are not used all the time.

**Findings:**

Question Q2 asked respondents how often they actively use equipment such as computers, laptops, smartphones, or other computerised equipment at work. Respondents could choose between the answer categories "Every day or almost every day," "At least once a week (but not every day)," and "Less than once a week." All categories were exclusive categories and, therefore, percentages add up to 100 percent. The first answer category ("Every day or almost every day") was selected by 93.44 percent of the English speaking respondents and 86.21 percent of the German speaking respondents. The second answer category ("At least once a week (but not every day)") was chosen by 6.56 of the English speaking respondents and 13.79 percent of the German speaking respondents. None of the respondents in both countries indicated that they have actively used such equipment at work less than once a week.

26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive question Q2 and Probe 3 due to the filter in question Q1. That is, only respondents that selected "yes" at the question whether they use computers, laptops, smartphones, or other computerised equipment at work, received question Q2 and Probe 3.

The goal of Probe 3 was to gain an understanding of the extent of use of digital technologies at work and to clarify the role of portable devices. Therefore, the closed-ended probe inquired how often the

respondents use a variety of devices (desktop computers, laptops, tablets, Smartphones or other devices) for working activities. Respondents could choose between the answer categories "Daily," "Less than daily," and "Never." Most of the respondents in both countries most frequently use desktop computers on a daily basis (British respondents: 52.46 percent, German respondents: 60.00 percent). However, Smartphones (British respondents: 49.18 percent, German respondents: 48.28 percent) and laptops (British respondents: 45.90 percent, German respondents: 41.38 percent) also serve as working devices on a daily basis for many British and German respondents whereas fewer respondents work with tablets daily (British respondents: 34.43 percent, German respondents: 15.52 percent). In a similar vein, British and German respondents most often indicated that they never work with tablets (British respondents: 49.18 percent, German respondents: 56.90 percent). Around one third of the British respondents also answered that they never use desktop computers (British respondents: 29.51 percent, German respondents: 29.31 percent), laptops (British respondents: 29.51 percent, German respondents: 32.76 percent), and smartphones (British respondents: 31.15 percent, German respondents: 37.93 percent) for their working activities. In addition, a few respondents mentioned that they use other devices either daily (British respondents: 4.92 percent) or less than daily (British respondents: 1.64 percent, German respondents: 1.72 percent). When these respondents were asked to further specify these devices, the British respondents mentioned digital cameras and printers and the German respondent thought of a mobile data entry (MDE) – tool.

**Probe 3: English version:** How often do you actively use the following devices for working activities? (N=61)

| Answer No. of respondents (%) | Daily      | Less than daily | Never      | Nonresponse |
|-------------------------------|------------|-----------------|------------|-------------|
| Desktop computers             | 32 (52.46) | 11 (18.03)      | 18 (29.51) | -           |
| Laptops                       | 28 (45.90) | 15 (24.59)      | 18 (29.51) | -           |
| Tablets                       | 21 (34.43) | 10 (16.39)      | 30 (49.18) | -           |
| Smartphones                   | 30 (49.18) | 12 (19.67)      | 19 (31.15) | -           |
| Other                         | 3 (4.92)   | 1 (1.64)        | 21 (34.43) | 36 (59.02)  |

**Probe 3: German version:** Wie häufig nutzen Sie aktiv die folgenden Geräte für Arbeitsaufgaben? (N=58)

| Answer No. of respondents (%) | Täglich    | Nicht jeden Tag | Nie        | Nonresponse |
|-------------------------------|------------|-----------------|------------|-------------|
| Desktop-Computer              | 35 (60.00) | 6 (10.34)       | 17 (29.31) | -           |
| Laptop                        | 24 (41.38) | 15 (25.86)      | 19 (32.76) | -           |
| Tablet                        | 9 (15.52)  | 16 (27.59)      | 33 (56.90) | -           |
| Smartphone                    | 28 (48.28) | 8 (13.79)       | 22 (37.93) | -           |
| Andere                        | -          | 1 (1.72)        | 23 (39.66) | 34 (58.62)  |

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**Recommendations:**

Question: No changes recommended.

Note:

The terminology 'at work' [bei der Arbeit] used in the question might be too vague as it could mean two different things: On the one hand, respondents could understand this term with regard to using such equipment **for working** activities. On the other hand, respondents could interpret this term as referring to using such equipment **at work for private purposes**. To avoid confusion with regard to the intended meaning of the question, we would recommend using the terminology 'for working activities' [für Arbeitsaufgaben] instead of 'at work' (at least in the German version).

English version:

"How often do you actively use such equipment for working activities?"

German version:

"Wie häufig nutzen Sie aktiv die folgenden Geräte für Arbeitsaufgaben?"

Answer categories: No changes recommended.

Tested question:

English version:

**Q4. How often have the following activities been part of your main paid job, in the last 12 months?**

*Please tick all that apply*

Answer options: Daily – Less than daily – Never

- a) Exchange emails
- b) Use social media to work
- c) Browse the internet to get work-related information
- d) Conduct online transactions (e.g. commercial, financial, transport, etc.)
- e) Enter data into business software or databases (e.g. for customer relations management)
- f) Create or edit electronic documents
- g) Use specialised software for design or simulation (e.g. CAD)
- h) Use specialised software to analyse data (e.g. technical, financial, etc.)
- i) Use computerised equipment to control, operate or repair machines (e.g. car electronics, CNC, etc.)
- j) Design or maintain computer networks, servers, websites, security functionalities
- k) Programming and software development

German version:

**Q4. Wie oft waren die folgenden Internet-Aktivitäten in den letzten 12 Monaten Teil Ihrer bezahlten Hauptbeschäftigung?**

*Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an*

Antwortoptionen: Täglich – Nicht jeden Tag – Nie

- a) Senden/ Empfangen von E-Mails
- b) Nutzung sozialer Netzwerke zu beruflichen Zwecken
- c) Suche nach arbeitsbezogenen Informationen im Internet
- d) Durchführung von Online-Transaktionen (z.B. Einkauf/ Handel, Finanzen, Transport, usw.)
- e) Eingabe von Daten in Unternehmens-Software oder Datenbanken (z.B. für Kundenmanagement)
- f) Erstellen oder Bearbeiten elektronischer Dokumente
- g) Nutzung spezieller Software für die Gestaltung und Simulation (z.B. CAD)
- h) Nutzung spezieller Software für Datenanalysen (z.B. technische, finanzielle Daten, usw.)
- i) Verwendung von computergesteuerter Ausstattung zur Kontrolle, Bedienung oder Reparatur von Maschinen (z.B. Kfz-Elektronik, CNC, usw.)
- j) Entwurf oder Wartung von Computer-Netzwerken, Servern, Webseiten, Sicherheitsfunktionen
- k) Programmierung und Software-Entwicklung

## Frequency distribution of English speaking respondents (N=61)

| Answer No. of respondents (%)  | Daily (%)  | Less than daily (%) | Never (%)  |
|--|------------|---------------------|------------|
| a) Exchange emails   | 49 (80.33) | 10 (16.39)          | 2 (3.28)   |
| b) Use social media to work  | 16 (26.23) | 11 (18.03)          | 34 (55.74) |
| c) Browse the internet to get work-related information   | 37 (60.66) | 19 (31.15)          | 5 (8.20)   |
| d) Conduct online transactions (e.g. commercial, financial, transport, etc.)                           | 19 (31.15) | 26 (42.62)          | 16 (26.23) |
| e) Enter data into business software or databases (e.g. for customer relations management)             | 28 (45.90) | 15 (24.59)          | 18 (29.51) |
| f) Create or edit electronic documents   | 32 (52.46) | 14 (22.95)          | 15 (24.59) |
| g) Use specialised software for design or simulation (e.g. CAD)  | 13 (21.31) | 5 (8.20)            | 43 (70.49) |
| h) Use specialised software to analyse data (e.g. technical, financial, etc.)                          | 18 (29.51) | 12 (19.67)          | 31 (50.82) |
| i) Use computerised equipment to control, operate or repair machines (e.g. car electronics, CNC, etc.) | 7 (11.48)  | 7 (11.48)           | 47 (77.05) |
| j) Design or maintain computer networks, servers, websites, security functionalities                   | 8 (13.11)  | 9 (14.75)           | 44 (72.13) |
| k) Programming and software development  | 8 (13.11)  | 7 (11.48)           | 46 (75.41) |

## Frequency distribution of German speaking respondents (N=58)

| Answer No. of respondents (%)   | Täglich (%) | Nicht jeden Tag (%) | Nie (%)    |
|---|-------------|---------------------|------------|
| a) Senden/ Empfangen von E-Mails  | 42 (72.41)  | 13 (22.41)          | 3 (5.17)   |
| b) Nutzung sozialer Netzwerke zu beruflichen Zwecken  | 8 (13.79)   | 21 (36.21)          | 29 (50.00) |
| c) Suche nach arbeitsbezogenen Informationen im Internet                                    | 20 (34.48)  | 29 (50.00)          | 9 (15.52)  |
| d) Durchführung von Online-Transaktionen (z.B. Einkauf/ Handel, Finanzen, Transport, usw.)  | 12 (20.69)  | 22 (37.93)          | 24 (41.38) |
| e) Eingabe von Daten in Unternehmens-Software oder Datenbanken (z.B. für Kundenmanagement)  | 23 (39.66)  | 18 (31.03)          | 17 (29.31) |
| f) Erstellen oder Bearbeiten elektronischer Dokumente                                       | 28 (48.28)  | 24 (41.38)          | 6 (10.34)  |
| g) Nutzung spezieller Software für die Gestaltung und Simulation (z.B. CAD)                 | 5 (8.62)    | 11 (18.97)          | 42 (72.41) |
| h) Nutzung spezieller Software für Datenanalysen (z.B. technische, finanzielle Daten, usw.) | 7 (12.07)   | 21 (36.21)          | 30 (51.72) |
| i) Verwendung von computergesteuerter Ausstattung zur                                       | 1 (1.72)    | 10 (17.24)          | 47 (81.03) |



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|  |          |            |            |
|--|----------|------------|------------|
| Kontrolle, Bedienung oder Reparatur von Maschinen (z.B. Kfz-Elektronik, CNC, usw.)         |          |            |            |
| j) Entwurf oder Wartung von Computer-Netzwerken, Servern, Webseiten, Sicherheitsfunktionen | 2 (3.45) | 13 (22.41) | 43 (74.14) |
| k) Programmierung und Software-Entwicklung   | 3 (5.17) | 6 (10.34)  | 49 (84.48) |

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### Cognitive techniques:

General Probing.

Probe 5: English version:

In the previous question you answered that you enter data into business software or databases (e.g. for customer relations management).

Could you please explain your tasks in this context a bit further?

Probe 5: German version:

Sie haben in der vorherigen Frage angegeben, dass Sie Daten in Unternehmens-Software oder Datenbanken (z.B. für Kundenmanagement) eingeben.

Können Sie Ihre Aufgaben in diesem Zusammenhang noch ein wenig mehr erläutern?

### Intention Probe 5:

The intention of Probe 5 was to evaluate whether the respondents' perception of the level of complexity of this task is in line with the questionnaire designers' perception of the level of complexity of this task. From the perspective of the questionnaire designers, entering data should be perceived by the respondents as a relatively basic skill.

### Findings:

Question Q4 inquired how often a variety of activities have been part of the respondents' main paid job in the last 12 months. In total, this item battery asked for 11 different activities. For each question of this item battery, the respondents had to choose between the answer categories "Daily," "Less than daily," and "Never." All categories were exclusive categories and, therefore, percentages add up to 100 percent. In order to avoid respondents' frustration due to too many probes in this web survey, the decision was made to only probe two items instead of probing all 11 items of this battery. One of the probes (Probe 6) asked the respondents whether they perform any further digital activities that were not mentioned in the previous question. In addition, we also selected one item of this item battery for probing. The selected item was item e) that asked respondents how often they enter data into business software or databases (e.g., for customer relations management) in their main paid job in the last 12 months.

The first answer category of item Q4e) ("Daily") was selected by 45.90 percent of the English speaking respondents and 39.66 percent of the German speaking respondents. The second answer category ("Less than daily") was chosen by 24.59 of the English speaking respondents and 31.03 percent of the German speaking respondents. Finally, 29.51 percent of the British respondents and 29.31 percent of

the German respondents indicated that they have never entered data into business software or databases in their main paid job in the last 12 months.

26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive question Q4 due to the filter in question Q1. That is, only respondents that selected "yes" at the question whether they use computers, laptops, smartphones, or other computerised equipment at work, received question Q4.

### Findings Probe 5:

Only respondents that indicated at item e) of question Q4 that they enter data into business software or databases in their main job "daily" or "less than daily" received Probe 5. That is, respondents that indicated at this item that they never enter data into business software or databases in their main job were not asked this probe. Therefore, 43 British and 41 German respondents received Probe 5 that asked the respondents whether they could explain their tasks in this context a bit further. The intention of Probe 5 was to evaluate whether the respondents' perception of the level of complexity of this task is in line with the questionnaire designers' perception of the level of complexity of this task. From the perspective of the questionnaire designers, entering data should be perceived by the respondents as a relatively basic skill.

The respondents that further explained their tasks in the context of entering data mentioned a variety of specific tasks. These tasks can be subsumed under the broader categories of "accounting & sales management," "updating databases & creating spreadsheets," "customer related tasks," "staff related tasks," and "gathering, processing, & archiving information." In addition, some respondents also mentioned specific software which they use in this context (e.g., Access Data Base, Excel, or SQL). Respondents in both countries that referred to specific tasks that fell in the category "accounting & sales management" mentioned that their tasks are related to accounting records (British respondents: 11.63 percent, German respondents: 4.88 percent), invoicing (British respondents: 4.65 percent, German respondents: 7.32 percent), and inventory (British respondents: 2.33 percent, German respondents: 7.32 percent). However, British respondents additionally referred to tasks related to sales management (6.98 percent), budget (2.33 percent), payment of suppliers (2.33 percent), and VAT remittance (2.33 percent). When respondents referred to specific tasks that fell in the broader category of "updating databases & creating spreadsheets," they either specified that they enter data into databases (British respondents: 9.30 percent, German respondents: 17.07 percent) or spreadsheets (British respondents: 6.98 percent). Most of the respondents in both countries mentioned specific tasks that belong in the broader category of "customer related tasks." In this context, 30.23 percent of the British and 31.71 percent of the German respondents wrote that they conduct tasks that are related to the customer relationship management of their company. A few respondents also mentioned that they enter data for the analysis of customers' waiting time (British respondent: 2.33 percent) and for online mailing lists and profiles (British respondents: 4.65 percent, German respondents: 2.44 percent). Respondents referred less frequently to tasks related to the broader category "staff related tasks." In this context, British respondents specified that they enter staff information into human resource databases (4.65 percent), that they enter data related to the payment of staff (2.33 percent), or daily information on the progress of work (2.33 percent). One German respondent mentioned in this context that he is responsible for the record of working hours.

Depending on the questionnaire designers' perception of what type of task might be classified as a simple task, tasks that fell into the broader category of "gathering, processing, & archiving information" may have the greatest potential to constitute tasks that are "out of scope" of the question-

naire designers' definition. In this broader category, most of the tasks require a more elevated skill set compared to the tasks in the other broader categories. In this category, a few respondents in both countries reported that they research and gather information (British respondents: 4.65 percent, German respondents: 4.88 percent) and run data analyses (British respondents: 4.65 percent, German respondents: 4.88 percent). In addition, British respondents also mentioned the tasks of creating surveys (2.33 percent), of entering data into a library management system (2.33 percent), and of creating electronic medical records (2.33 percent).

Besides tasks that can be summarized in the broader categories, some respondents wrote specific software programs. That is, respondents did not describe their tasks more precisely. Instead, these respondents described how they enter the data into the datasets and spreadsheets. Only British respondents mentioned specific software programs. Respondents reported the following software programs in this context: Access data base (4.65 percent), Mango db (2.33 percent), Cisco (2.33 percent), Excel (4.65 percent), Phocas (2.33 percent), SPSS (2.33 percent), and SQL (4.65 percent).

Finally, some respondents refused to answer this probe (British respondents: 11.63 percent (n=5), German respondents: 17.07 percent (n=7)). Nearly none of the respondents indicated that they don't know how to respond to this question (one British and one German respondent).

| Tasks (entering data into business software or databases) | British respondents (n=43) (%) | German respondents (n=41) (%) |
|---|--------------------------------|-------------------------------|
| <b>Accounting &amp; sales management</b>                  |                                |                               |
| Accounting records  | 5 (11.63)                      | 2 (4.88)                      |
| Invoicing   | 2 (4.65)                       | 3 (7.32)                      |
| Inventory   | 1 (2.33)                       | 3 (7.32)                      |
| Sales management  | 3 (6.98)                       | -                             |
| Budget  | 1 (2.33)                       | -                             |
| Payment of suppliers                                      | 1 (2.33)                       | -                             |
| VAT remittance  | 1 (2.33)                       | -                             |
| <b>Updating databases &amp; creating spreadsheets</b>     |                                |                               |
| Database  | 4 (9.30)                       | 7 (17.07)                     |
| Spreadsheets  | 3 (6.98)                       | -                             |
| <b>Customer related tasks</b>                             |                                |                               |
| Customer relationship management (CRM)                    | 13 (30.23)                     | 13 (31.71)                    |
| Analysis of customers' waiting time                       | 1 (2.33)                       | -                             |
| Online mailing lists & profiles                           | 2 (4.65)                       | 1 (2.44)                      |
| <b>Staff related tasks</b>                                |                                |                               |
| Enter staff information into HR database                  | 2 (4.65)                       | -                             |
| Payment of staff  | 1 (2.33)                       | -                             |

|   |           |           |
|---|-----------|-----------|
| Recording working hours                                   | -         | 1 (2.44)  |
| Daily information on progress of work                     | 1 (2.33)  | -         |
| <b>Gathering, processing, &amp; archiving information</b> |           |           |
| Researching & gathering information                       | 2 (4.65)  | 2 (4.88)  |
| Creating surveys  | 1 (2.33)  | -         |
| Data analysis   | 2 (4.65)  | 2 (4.88)  |
| Library management system                                 | 1 (2.33)  | -         |
| Creating electronic medical records                       | 1 (2.33)  | -         |
| <b>Specific Software</b>                                  |           |           |
| Access data base  | 2 (4.65)  | -         |
| Mango db (data base)                                      | 1 (2.33)  | -         |
| Cisco   | 1 (2.33)  | -         |
| Excel   | 2 (4.65)  | -         |
| Phocas  | 1 (2.33)  | -         |
| SPSS  | 1 (2.33)  | -         |
| SQL   | 2 (4.65)  | -         |
| <b>Nonresponse</b>  |           |           |
| Don't know  | 1 (2.33)  | 1 (2.44)  |
| Refusal   | 5 (11.63) | 7 (17.07) |

Probe 6: English version:

Do you perform any further digital activities that were not mentioned in the previous question?  
Please describe briefly.

Probe 6: German version:

Führen Sie weitere digitale Aktivitäten aus, die in der vorherigen Frage noch nicht genannt wurden? Bitte beschreiben Sie diese kurz.

#### Intention Probe 6:

The intention of Probe 6 was to check what is perceived as not covered by the answer options a) to k) and whether additional items need to be added.

#### Findings Probe 6:

In addition to Probe 5, a second probe (Probe 6) was asked at question Q4. The intention of Probe 6 was to check whether respondents thought that certain tasks are not covered by the items a) to k) of question Q4 and to assess whether additional items need to be added to this item battery. Probe 6 asked the respondents whether they perform any further digital activities that were not mentioned in the previous question. In order to avoid confusing the respondents and in order to keep the response burden as low as possible to prevent respondents' frustration, only respondents that chose the answer category "never" at item Q4e), received Probe 6. Therefore, only participants that did not receive Probe 5 responded to Probe 6. In total, 18 British respondents and 17 German respondents provided an answer to Probe 6.

Most respondents from both countries indicated that they could not think of any further digital activities that were missing in the previous question (British respondents: 83.33 percent, German respondents: 58.82 percent). However, German respondents also mentioned the digital activity of creating lists and documents (1 respondent) and talking with customers online (1 respondent). In contrast, British respondents also referred to emailing tenants and suppliers (1 respondent), gaming (1 respondent), and using the internet as a source of music (1 respondent).

| Further digital activities     | British respondents<br>(n=18) (%) | German respondents<br>(n=17) (%) |
|--------------------------------|-----------------------------------|----------------------------------|
| Create lists and documents     | -                                 | 1 (5.88)                         |
| Talk with customers online     | -                                 | 1 (5.88)                         |
| Emailing tenants and suppliers | 1 (5.56)                          | -                                |
| Gaming                         | 1 (5.56)                          | -                                |
| Use as source of music         | 1(5.56)                           | -                                |
| No/none/no further             | 15 (83.33)                        | 10 (58.82)                       |
| Unusable responses             | -                                 | 5 (29.41)                        |

#### Recommendations Q4:

**Question:** The question text in German differs from the English source question. In the German version, respondents are asked to report on "Internet-Aktivitäten" [internet activities]. In the English version, respondents are only asked for "activities." However, the items f)-k) are activities that do not necessarily presuppose working online. The difference in question wording could be an explanation for the differences between German and British respondents in the frequency distribution of the items f)-k). Therefore, we recommend deleting the word "internet" in the German version:

**"Wie oft waren die folgenden Aktivitäten in den letzten 12 Monaten Teil Ihrer bezahlten Hauptbeschäftigung?"**

**Answer categories:** No changes recommended.

**Tested question:**

English version:

|  |
|--|
| <p><b>Q5. In the last 12 months, did you have to learn how to use new software (programmes and applications)?</b></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
|--|

German version:

|   |
|---|
| <p><b>Q5. Mussten Sie in den letzten 12 Monaten lernen, eine neue Software zu nutzen (Programme und Anwendungen)?</b></p> <p><input type="checkbox"/> Ja</p> <p><input type="checkbox"/> Nein</p> |
|---|

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| Yes                    | 26                 | 42.62 |
| No                     | 35                 | 57.38 |
| <i>Nonresponse</i>     | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version      | No. of respondents | %     |
|----------------------------|--------------------|-------|
| Ja                         | 21                 | 36.21 |
| Nein                       | 37                 | 63.79 |
| <i>Antwortverweigerung</i> | -                  | -     |

**Cognitive techniques:**

General Probing.

Probe 7: English version:

|  |
|--|
| Please describe the new software (programmes and applications) you had to learn. |
|--|

Probe 7: German version:

|  |
|--|
| Bitte beschreiben Sie die neue Software (Programme und Anwendungen), die Sie lernen mussten. |
|--|

### Intention:

The research intention of Probe 7 was to get a very basic idea of the changes related to ICT usage at the workplace. The probe was intended to ensure that the wording is unambiguous enough.

### Findings:

Question Q5 asked respondents whether they had to learn how to use new software (programmes and applications) in the last 12 months. Respondents could choose between the answer categories "Yes" and "No." All categories were exclusive categories and, therefore, percentages add up to 100 percent. In total, 42.62 percent of the British respondents and 36.21 of the German respondents selected "Yes" whereas 57.38 of the British respondents and 63.79 of the German respondents selected "No."

Only respondents that selected the response "Yes" at question Q1 received question Q5. As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1. For question Q5, we asked a general probe (Probe 7) that all respondents received who chose the answer category "Yes" at question Q5 which means that 25 British respondents and 21 German respondents provided an answer to this probe.

The intention of Probe 7 was to understand the changes related to ICT usage at the workplace and to assess whether the phrasing of question Q5 is unambiguous enough. Therefore, Probe 7 asked the respondents to describe the new software (programmes and applications) they had to learn. In this context, respondents in both countries most frequently mentioned business software (British respondents: 36.00 percent, German respondents: 28.57 percent). In particular, respondents mentioned software that address a variety of different business aspects, such as marketing, customer relationship management, sales accounting, human resource solutions, and tax programmes. Besides specific software programmes such as SAP, some respondents described the software they had to learn.

- "Credit check for new customers. The software allows you to find the credit rating on new customers." (British respondent, ID 362)
- "I had to learn a lot about new invoicing and staff management software packages and I also had to learn a lot about various advertising packages." (British respondent, ID 377)
- "It is a payment software in which payment requests are entered and approved, enabling the finance department to settle the corresponding invoices." (German respondent, ID 112)

Instead of using general business solutions, several respondents also reported that they had to learn company specific software which is software that was specifically developed for the company or organization for which respondents are working. Respondents in both countries referred to company specific software (British respondents: 12.00 percent, German respondents: 23.81 percent). In addition, some respondents in both countries had to learn office software, such as Microsoft Office, Excel, Sharepoint, and Open Office (British respondents: 5.56 percent, German respondents: 14.29 percent).

Besides business and office related software, British and German respondents also had to learn programming software and languages, such as Angular 2, Node js, SQL, C++ (British respondents: 12.00 percent, German respondents: 4.76 percent) and attended courses to learn about current versions of operating systems, such as Windows 10 (British respondents: 4.00 percent, German respondents: 9.52 percent). Finally, British respondents also reported that they received training with regard to editing and visual design software, such as Camtasia and New Adobe Creative suite (InDesign, Photoshop, and Illustrator) (British respondents: 8 percent) and that they attended courses to learn about software to create online courses, such as Teachable or Tapestry (British respondents: 8 percent).

Overall, the respondents seem to have understood the question correctly. Nearly all respondents mentioned specific software (programmes and applications) and, therefore, the phrasing of the question is unambiguous enough.

| Software                      | British<br>respondents<br>(n=25) (%) | German<br>respondents<br>(n=21) (%) |
|-------------------------------|--------------------------------------|-------------------------------------|
| Business software             | 9 (36.00)                            | 6 (28.57)                           |
| Company specific software     | 3 (12.00)                            | 5 (23.81)                           |
| Office software               | 1 (4.00)                             | 3 (14.29)                           |
| Programming software          | 3 (12.00)                            | 1 (4.76)                            |
| Operating system              | 1(4.00)                              | 2 (9.52)                            |
| Software for creating courses | 2 (8.00)                             | -                                   |
| Editing software              | 2 (8.00)                             | -                                   |
| Further software              | 2 (8.00)                             | 2 (9.52)                            |
| Unusable responses            | 1 (4.00)                             | 1 (4.76)                            |

#### Recommendations:

Question: No changes recommended.

Answer categories: No changes recommended.



**Tested question:**

English version:

**Q6.** In the last 12 months, have the main tasks of your job changed as a result of the introduction of new software (programmes and applications)?

☐ Yes  
☐ No

German version:

**Q6.** Haben sich Ihre Hauptaufgaben am Arbeitsplatz in den letzten 12 Monaten als Folge der Einführung neuer Software (Programme und Anwendungen) verändert?

☐ Ja  
☐ Nein

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| Yes                    | 10                 | 16.39 |
| No                     | 51                 | 83.61 |
| <i>Nonresponse</i>     | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version      | No. of respondents | %     |
|----------------------------|--------------------|-------|
| Ja                         | 5                  | 8.62  |
| Nein                       | 53                 | 91.38 |
| <i>Antwortverweigerung</i> | -                  | -     |

**Cognitive techniques:**

General Probe.

Probe 8: English version:

Could you please tell us how you felt about these changes?

Probe 8: German version:

Bitte beschreiben Sie, wie Sie diese Veränderungen empfunden haben.

### Intention:

The intention of Probe 8 was to check which type of changes respondents have in mind when answering question Q6 and how the organisational changes due to changes in the software are perceived by the respondents.

### Findings:

Question Q6 asked respondents whether the main tasks of their job changed as a result of the introduction of new software (programmes and applications) in the last 12 months. Respondents could choose between the answer categories "Yes" and "No." All categories were exclusive categories and, therefore, percentages add up to 100 percent. In total, 16.39 percent of the British respondents and 8.61 of the German respondents selected "Yes" whereas 83.61 of the British respondents and 91.38 of the German respondents selected "No."

Only respondents that selected the response "Yes" at Q1 received question Q6. As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1. For question Q6, we asked a general probe (Probe 8) that all respondents received who chose the answer category "Yes" at question Q6. Due to the high percentage of respondents that selected the answer category "No" at this question, 10 British respondents and 5 German respondents received Probe 8.

The intention of Probe 8 was to understand which type of changes respondents had in mind when answering question Q6 and how the organisational changes due to the introduction of new software are perceived by the respondents. To answer these questions, we asked the respondents to tell us how they felt about the changes in their main tasks of their job resulting from the introduction of new software. Out of the respondents that felt that the tasks of their main job have changed, 6 respondents associated positive changes with the introduction of new software (5 British respondents, 1 German respondent). Several of these respondents also provided reasons for their positive evaluation. For example:

- "New experiences, enrichment through specialized knowledge." (German respondent, ID 125)
- "Easier and better system" (British respondent, ID 356)
- "New invoicing and staff management software made everything a lot easier to keep track of and [it is possible to] manage all in one place without having to have multiple documents open." (British respondent, ID 377)

However, a few British respondents (2 respondents) had more mixed feelings. For example, respondent 755 pointed to the increased workload at the beginning but the positive impact of the new software in the long run: *"It was a bigger workload to start with because it was a more sophisticated database and needed to be learned; however, once learned it reduced my workload slightly."*

Three German respondents felt the changes had been negative. One respondent explained why: *"Much more work and more complicated processes"* (ID 109). None of the British respondents perceived the changes as purely negative.

Finally, three respondents (ID 93, ID 108, ID 136) did not describe their feelings related to the change but simply described the factual changes in their job tasks without a positive or negative evaluation.

For example, respondent 136 described the changes as follows: *"We are using mapping to show where development land is available; I have learned how to enter data onto this map."*

#### Findings Probe 8:

| Thoughts on the changes            | British respondents (n=10) | German respondents (n=5) |
|------------------------------------|----------------------------|--------------------------|
| Changes positive                   | 3                          | -                        |
| Changes positive + explanation why | 2                          | 1                        |
| Changes neutral + explanation why  | 2                          | -                        |
| Changes negative                   | -                          | 2                        |
| Changes negative + explanation why | -                          | 1                        |
| Describing changes                 | 2                          | 1                        |
| Nonresponse                        | 1                          | -                        |

#### Recommendations:

Question: No changes recommended.

Answer categories: No changes recommended.

**Tested question:**

English version:

- Q7.** Over the past year, have you been involved in choosing, improving or otherwise modifying the software (programmes and applications) used for work in your department or organisation?
- ☐ Yes
- ☐ No
- ☐ Not applicable

German version:

- Q7.** Haben Sie im vergangenen Jahr daran mitgewirkt, in Ihrer Abteilung oder Organisation arbeitsbezogene Software (Programme und Anwendungen) auszuwählen, zu verbessern oder anderweitig zu modifizieren?
- ☐ Ja
- ☐ Nein
- ☐ Nicht relevant

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| Yes                    | 16                 | 26.23 |
| No                     | 32                 | 52.46 |
| Not applicable         | 13                 | 21.31 |
| <i>Nonresponse</i>     | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version      | No. of respondents | %     |
|----------------------------|--------------------|-------|
| Ja                         | 11                 | 18.97 |
| Nein                       | 34                 | 58.62 |
| Nicht relevant             | 13                 | 22.41 |
| <i>Antwortverweigerung</i> | -                  | -     |

**Cognitive techniques:**

General Probe.

Probe 9: English version:

Please describe how you have been involved in the selection, improvement or modification of the software programmes or applications used for work in your department or organisation?

Probe 9: German version:

Bitte beschreiben Sie Ihre Mitwirkung bei der Auswahl, Verbesserung oder Modifizierung arbeitsbezogener Software (Programme und Anwendungen) für Ihre Abteilung oder Organisation.

#### Intention:

The intention of Probe 9 was to reveal what respondents understand as involvement in software changes.

#### Findings:

Question Q7 asked respondents whether they have been involved in choosing, improving or otherwise modifying the software (programmes and applications) used for work in their department or organisation over the past year. Respondents could choose between the answer categories "Yes," "No," and "Not applicable." All categories were exclusive categories and, therefore, percentages add up to 100 percent. Roughly a quarter of the English speaking respondents indicated that over the past year, they had been involved in choosing, improving or otherwise modifying the software used for work, while 18.97 percent of the German respondents chose this answer. In contrast, 52.46 percent of the British and 58.62 percent of the German respondents selected the answer category "No." For 21.31 percent of the English speaking respondents and 22.41 percent of the German speaking respondents, this question is not applicable.

Only respondents that selected the response "Yes" at Q1 received question Q7. As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1. The respondents that indicated at question Q7 that they had been involved in choosing, improving or otherwise modifying the software (16 English speaking respondents and 11 German speaking respondents) received a general probe for this question.

The intention of Probe 9 was to reveal the respondents' understanding of involvement in software changes. Therefore, Probe 9 encouraged the respondents to describe how they have been involved in the selection, improvement or modification of the software programmes or applications used for work in their department or organisation. Several respondents in both countries mentioned that they were involved in the **selection** of the software. In this context, one respondent in each country reported that they had to search for potential software solutions and that they had to assess and test the different software options. One British respondent also had to run demonstrations of a specific software programme: "[I] was involved in demonstrations of various HR databases and jointly made the decision as to which one to purchase" (British respondent, ID 755). Three British and one German respondent recommended specific software programmes or provided consultation. For example, respondent 136 (British) described the process as follows: "We have purchased a license for a system that allows us to conduct analysis of housing market data (house prices, rents etc.) I am the only employee trained to use this system and recommended our use of it." In addition, four British and one German respondent were responsible for the actual selection of the software:

- "I have chosen which programmes to use for data analysis and had the programme purchased for the university." (British respondent, ID 162)

- "In order to achieve my objectives, I have to use the best tools available. I needed to produce videos, and after research, it seemed like Camtasia was the best choice, so I bought it and learned how to use it." (British respondent, ID 330)
- "As I deal with payroll, I get to choose the payroll software that I use. I also am looking to change our current main software so I am looking at different companies and will choose one that is fitting for our business." (British respondent, ID 362)

Besides the involvement in the selection process, a few respondents also contributed to the **implementation** of the chosen software, its modification and improvement (1 British respondent, 2 German respondents). Respondent 87 (German) described her involvement as follows: *"A new main programme will be introduced, and all employees who will work with it are involved in adapting and improving it."* In addition, one English speaking respondent stated that he had occupied a team leading position during the process.

However, three respondents provided answers that were out of scope as they described the factual changes in software, not the quality of their involvement. Two respondents gave unusable responses. In total, five respondents refused to answer the probe (3 English speaking respondents, 2 German speaking respondents). One British respondent refused to answer due to data security concerns.

| Involvement                                  | British respondents (n=16) (%) | German respondents (n=11) (%) |
|--|--------------------------------|-------------------------------|
| <b>Selection</b>                             |                                |                               |
| Researching potential software               | 1 (6.25)                       | 1 (9.01)                      |
| Assessment of potential software             | 1 (6.25)                       | 1 (9.01)                      |
| Testing potential software                   | 1 (6.25)                       | 1 (9.01)                      |
| Demonstration of potential software          | 1 (6.25)                       | -                             |
| Recommendation/Consultation                  | 3 (18.75)                      | 1 (9.01)                      |
| Making the decision                          | 4 (25.00)                      | 1 (9.01)                      |
| <b>After selection</b>                       |                                |                               |
| Implementation                               | -                              | 1 (9.01)                      |
| Modification & Improvement                   | 1 (6.25)                       | 1 (9.01)                      |
| <b>Other</b>                                 |                                |                               |
| Team leading position                        | 1 (6.25)                       | -                             |
| Out of scope: describing changes in software | 1 (6.25)                       | 2 (18.19)                     |
| Unusable responses                           | 1 (6.25)                       | 1 (9.01)                      |
| <b>Nonresponse</b>                           |                                |                               |
| Refusal                                      | 2 (12.50)                      | 2 (18.19)                     |
| Refusal due to concerns about data security  | 1 (6.25)                       | -                             |

**Recommendations:**

**Question:** With regard to the level of involvement in choosing, improving or modifying software, the phrasing of the question allows for a large scope of interpretation. Depending on the questionnaire designers' definition of what constitutes "choosing, improving or modifying," some interpretations might be out of scope. If this is the case, we would recommend narrowing the scope of this question by providing examples. If all interpretations have been in scope of the questionnaire designers' definition, no changes are necessary.

**Answer categories:** Given that the wording of the third response category "nicht relevant" is highly uncommon as a response category, we would recommend replacing the response category "Nicht relevant" by either "Keine Nutzung von Software (Programme und Anwendungen) in meiner Abteilung/Organisation" or "Für meine Abteilung/Organisation nicht relevant" in the German version.

**Tested question:**

English version:

**Q8. Which of the following statements would best describe your digital skills at work?**

*Please tick one answer value*

☐ I need further training to cope well with my duties

☐ My actual digital skills correspond well with my duties

☐ I have the digital skills to cope with more demanding duties

German version:

**Q8. Welche der folgenden Aussagen beschreibt am besten Ihre digitalen Kompetenzen am Arbeitsplatz?**

*Bitte kreuzen Sie nur eine Antwortmöglichkeit an*

☐ Ich benötige Weiterbildung, um meinen Aufgaben gerecht zu werden

☐ Meine digitalen Kompetenzen entsprechen meinem momentanen Aufgabenprofil gut

☐ Ich habe die digitalen Kompetenzen, um auch anspruchsvollere Aufgaben zu bewältigen

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version                                       | No. of respondents | %     |
|--|--------------------|-------|
| I need further training to cope well with my duties          | 15                 | 24.59 |
| My actual digital skills correspond well with my duties      | 35                 | 57.38 |
| I have the digital skills to cope with more demanding duties | 11                 | 18.03 |
| Nonresponse  | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| Ich benötige Weiterbildung, um meinen Aufgaben gerecht zu werden                    | 8                  | 13.79 |
| Meine digitalen Kompetenzen entsprechen meinem momentanen Aufgabenprofil gut        | 39                 | 67.24 |
| Ich habe die digitalen Kompetenzen, um auch anspruchsvollere Aufgaben zu bewältigen | 11                 | 18.97 |
| Antwortverweigerung   | -                  | -     |

**Cognitive techniques:**

Comprehension Probing.



Probe 10: English version:

What skills do you consider to be digital skills?

Probe 10: German version:

Welche Fähigkeiten oder Fertigkeiten zählen Ihrer Meinung nach zu "digitalen Kompetenzen"?

#### Intention:

The intention of Probe 10 was to check whether the term 'digital skills' is consistently understood by all respondents.

#### Findings:

Question Q8 asked respondents which statement would best describe their digital skills at work. Respondents could choose between the statements "I need further training to cope well with my duties," "My actual digital skills correspond well with my duties," and "I have the digital skills to cope with more demanding duties." The statements were exclusive categories and, therefore, percentages add up to 100 percent. Roughly a quarter of the British respondents (24.59 percent) and 13.79 percent of the German respondents stated that their digital skills at work could be described with the phrase "I need further training to cope well with my duties." Most of the respondents in both countries felt that their skills correspond well with their duties (British respondents: 57.38 percent, German respondents: 67.24 percent). Around a fifth of British and German respondents even considered their digital skills to allow them to cope with more demanding duties (British respondents: 18.03 percent, German respondents: 18.97 percent).

Only respondents that selected the response "Yes" at Q1 received question Q7. As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1. For question Q8, we asked a comprehension probe (Probe 10) that all respondents received who chose either the statement "I need further training to cope well with my duties" or "I have the digital skills to cope with more demanding duties." That is, respondents that selected the statement "My actual digital skills correspond well with my duties" did not receive this probe. In total, 26 British and 19 German respondents provided an answer to this probe.

The intention of Probe 10 was to check whether the term 'digital skills' is consistently understood by all respondents. Therefore, Probe 10 asked the respondents to explain what skills they consider to be 'digital skills.' Overall, there seems to be a very heterogeneous understanding of the term 'digital skills.' On the one hand, some respondents show a very broad understanding of the term. Respondents that fall in this category defined the term 'digital skills' as computer skills (10 British and 3 German respondents) or software skills (5 British and 4 German respondents). Some respondents also mentioned in this context that a person with digital skills should be able to work with computer equipment, such as a keyboard (3 British respondents) or should be able to use the internet (4 British respondents, 1 German respondent). In addition, for one German respondent digital skills presuppose the display of user-competency and one British respondent defined digital skills as knowing how to work with new programmes.

On the other hand, some respondents had a more narrow understanding of the term 'digital skills.' These respondents associated very specific skills with this term, such as being able to use social media (2 British respondents, 1 German respondent), to share information online (1 British respondent), to

search and edit information online (2 British respondents, 1 German respondent), and to write emails (2 British respondents). Further narrow definitions were to be able to do online marketing or brand advertising (2 British respondents, 1 German respondent), to do web-design or graphic design (2 British respondents, 1 German respondent) or to be able to do desktop-publishing (1 British respondent). Respondents also thought about the coding, editing, inputting and analysing of data (2 British respondents, 1 German respondent), to create spreadsheets (1 German respondent), automation testing (1 British respondent), and repairing soft- and hardware (1 German respondent).

Besides broader understandings and specific skills, some respondents listed specific programmes, platforms or operating systems such as Windows (1 British respondent) or Microsoft Office (3 British respondents) but also social media platforms like Twitter (1 German respondent) or Instagram (1 German respondent).

More than a quarter of the German speaking respondents refused to answer, which might indicate that the German respondents struggle with this term or question. In total, there were seven answer refusals (2 British respondents and 5 German respondents.)

#### Findings Probe 10:

| Tasks (you enter data into business software or databases) | British respondents (n=26) (%) | German respondents (n=19) (%) |
|--|--------------------------------|-------------------------------|
| <b>Broad understanding</b>                                 |                                |                               |
| IT/computer skills   | 10 (38.46)                     | 3 (15.79)                     |
| Software skills  | 5 (19.23)                      | 4 (21.06)                     |
| Computer equipment (i.e. keyboard)                         | 3 (11.54)                      | -                             |
| Internet   | 4 (15.38)                      | 1 (5.26)                      |
| Further broad understandings                               | 1 (3.85)                       | 1 (5.26)                      |
| <b>More specific skills</b>                                |                                |                               |
| Social media   | 2 (7.70)                       | 1 (5.26)                      |
| Sharing information online                                 | 1 (3.85)                       | -                             |
| Searching for and editing/evaluating information (online)  | 2 (7.70)                       | 1 (5.26)                      |
| Email  | 2 (7.70)                       | -                             |
| Marketing  | 2 (7.70)                       | 1 (5.26)                      |
| Web-design   | 2 (7.70)                       | 1 (5.26)                      |
| Desktop publishing   | 1 (3.85)                       | -                             |
| Coding, editing, inputting and analysing data              | 2 (7.70)                       | 1 (5.26)                      |
| Spreadsheet  | -                              | 1 (5.26)                      |
| Automation testing   | 1 (3.85)                       | -                             |
| Repairing soft- and hardware                               | -                              | 1 (5.26)                      |
| <b>Specific programmes/platforms/operating systems</b>     |                                |                               |

|                       |           |           |
|-----------------------|-----------|-----------|
| Windows               | 1 (3.85)  | -         |
| MS office             | 3 (11.54) | -         |
| 3D-planning programme | -         | 1 (5.26)  |
| Twitter               | -         | 1 (5.26)  |
| Instagram             | -         | 1 (5.26)  |
| <b>Nonresponse</b>    |           |           |
| Refusal               | 2 (7.70)  | 5 (26.32) |

#### Recommendations:

**Question:** Respondents seem to associate a variety of different skills with the term 'digital skills.' We classify this term as a very vague term which needs to be further specified depending on the questionnaire designers' definition of 'digital skills.'

**Answer categories:** No changes recommended.

**Tested question:**

English version:

**Q9.** In the last 12 months, did the usage of computers, laptops, smartphones, or other computerised equipment at work increase or reduce any of the following job characteristics, if any?

*Please tick all that apply*

German version:

**Q9.** Haben sich in den letzten 12 Monaten bei der Arbeit durch die Nutzung von Computern, Laptops, Smartphones und anderer computergesteuerter Ausstattung die folgenden Stellenmerkmale erhöht oder verringert, wenn überhaupt?

*Bitte kreuzen Sie alle relevanten Punkte an*

**Frequency distribution of English speaking respondents (N=54)**

|   | Increase (%) | Decrease (%) | No relevant change (%) |
|---|--------------|--------------|------------------------|
| a) The time spent on repetitive and routine tasks                         | 9 (16.67)    | 12 (22.22)   | 33 (61.11)             |
| b) My work productivity   | 21 (38.89)   | 3 (5.56)     | 30 (55.56)             |
| c) The opportunities to be creative                                       | 23 (42.59)   | 1 (1.85)     | 30 (55.56)             |
| d) The freedom and independence in organising my tasks                    | 24 (44.44)   | 4 (7.41)     | 26 (48.15)             |
| f) The monitoring of my performance at work                               | 16 (29.63)   | 4 (7.41)     | 34 (62.96)             |
| g) The need to learn new things   | 20 (37.04)   | 4 (7.41)     | 30 (55.56)             |
| h) The collaboration and cooperation with colleagues or business partners | 20 (37.04)   | 4 (7.41)     | 30 (55.56)             |
| i) The amount of irregular working hours (night, week-end, shift work)    | 6 (11.11)    | 9 (16.67)    | 39 (72.22)             |
| <i>Nonresponse</i>  |              |              |                        |

### Frequency distribution of German speaking respondents (N=49)

|  | Zunahme<br>(%) | Abnahme<br>(%) | Keine relevante<br>Veränderung<br>(%) |
|--|----------------|----------------|---------------------------------------|
| a) Die Zeit, die mit Wiederholungs- und Routineaufgaben verbracht wird           | 14 (28.57)     | 2 (4.08)       | 33 (67.35)                            |
| b) Meine Arbeitsproduktivität  | 18 (36.73)     | 3 (6.12)       | 28 (57.14)                            |
| c) Meine Möglichkeit, kreativ zu sein  | 13 (26.53)     | 6 (12.24)      | 30 (61.22)                            |
| d) Die Freiheit und Selbstständigkeit bei der Organisation meiner Aufgaben       | 19 (38.78)     | 3 (6.12)       | 27 (55.10)                            |
| f) Die Überwachung meiner Arbeitsleistung  | 9 (18.37)      | 1 (2.04)       | 39 (79.59)                            |
| g) Die Notwendigkeit, neue Dinge zu lernen                                       | 16 (32.65)     | 1 (2.04)       | 32 (65.31)                            |
| h) Zusammenarbeit mit Kollegen oder Geschäftspartnern                            | 16 (32.65)     | 2 (4.08)       | 31 (63.27)                            |
| i) Die Höhe der unregelmäßigen Arbeitszeiten (Nacht-/ Wochenend-/ Schichtarbeit) | 6 (12.24)      | 3 (6.12)       | 40 (81.63)                            |

*Antwortverweigerung*

### Cognitive techniques:

Category selection Probing.

### Probe 11: English version:

You answered that the usage of computers etc. increased/decreased the amount of irregular working hours.

Please explain your answer a little further. Why did you select it?

### Probe 11: German version:

Sie haben angegeben, dass die Nutzung von Computern usw. den Anteil der unregelmäßigen Arbeitszeiten [erhöht/verringert] hat.

Können Sie Ihre Antwort noch ein wenig näher erklären? Warum haben Sie diese Antwort gewählt?

### Intention:

Probe 11 indirectly assessed whether respondents understand the question wording of question Q9. Since the number of probes that can be asked in an online-pretest is limited, it is impossible to assess all items of this item battery. Instead, the last item of this item battery was selected to test whether respondents understand Q9 correctly. If responses to Probe 11 are meaningful, it is possible to conclude that the overall question was sufficiently understood.

## Findings:

Question Q9 asked respondents whether the usage of computers, laptops, smartphones, or other computerised equipment at work increased or reduced a number of job characteristic in the last 12 months. The item battery consisted of eight items that covered the job characteristics of spending time on repetitive and routine tasks, opportunities to be creative, freedom and independence in organising own tasks, monitoring of own performance at work, the need to learn new things, the collaboration and cooperation with colleagues or business partners, and the amount of irregular working hours (night, weekend, shift work). Respondents could choose between the answer categories "Increase," "Decrease," and "No relevant change." All categories were exclusive categories and, therefore, percentages add up to 100 percent. The pretesting study assessed the last item of this item battery in more detail ("The amount of irregular working hours (night, weekend, shift work)"). For this item, most of the respondents indicated that the usage of computers, laptops, smartphones, or other computerised equipment at work brought no relevant change with regard to the irregularity of working hours (British respondents: 72.22 percent, German respondents: 81.63 percent). Only 11.11 percent of the British respondents and 12.24 percent of the German respondent answered that the amount of irregular working hours increased and 16.67 of the British respondents and 6.12 of the German respondents reported that the number of irregular hours decreased.

Only respondents that selected the response "Yes" at Q1 and "Yes" at either Q3a or Q3b received the question Q9. As a consequence, 54 British respondents and 49 German respondents could provide an answer to question Q9. As a consequence, 42 respondents did not receive this question (21 British respondents and 21 German respondents).

All respondents that chose the answer category "Increase" or "Decrease" at item Q9i) received a category selection probe that encouraged respondents to explain their answer a little further and to provide reasons for their answer selection. Depending on the previous answer selection the introductory sentence of the probe was adapted to the answer selection for item Q9i) (e.g., respondents that chose "decrease" at item Q9i) received the introductory sentence: "You answered that the usage of computers etc. decreased the amount if irregular working hours."). Given the filter condition in this questionnaire and the respondents' answer selection at item Q9i), only a small subset of all respondents received this probe (15 British respondents and 9 German respondents).

In total, 12 respondents (6 British respondents and 6 German respondents) chose the answer value "increase" for question Q9i) and, thus, the probe inquired for the reason for an increase of irregular working hours. All German respondents and one British respondent pointed to an increase of their workload. For example respondent 91 explained that there was a *"greater workload as a result of more tasks"* and respondent 340 clarified that *"there have been a lot of projects recently that required more overtime than usual and, due to worse staffing, fewer employees had to cope with the tasks which arose."* Half of the British respondents remarked that the amount of irregular working hours increased because the usage of computers led to more flexibility of the working hours and constant accessibility, e.g., through the possibility *"to work from home in the evenings and weekends"* (British respondent, ID 162). One British respondent (ID 108) also pointed to the pressure to work efficiently: *"If we don't use computer properly then the working hours will increase."*

| Increase                  | British respondents (n=6) | German respondents (n=6) |
|---------------------------|---------------------------|--------------------------|
| Workload                  | 1                         | 6                        |
| Flexibility/accessibility | 3                         | -                        |
| Need for efficiency       | 1                         | -                        |
| Unusable response         | 1                         | -                        |

Besides respondents who provided reasons for an increase of irregular working hours, some respondents (9 British respondents, 3 German respondents) selected the answer option "Decrease" at item Q9i). As a consequence, these respondents were asked for the reasons for a decrease of irregular working hours due to the usage of computers and similar devices. Two British and three German respondents mentioned the aspects of an increased flexibility and independence due to an automatization of processes that helped to switch from irregular to regular working hours. Here are two examples that fall in this category:

- "With the ability to schedule things to happen automatically without you having to be woken to set them off mean that my working hours became more normal." (British respondent, ID 377)
- "Because I know exactly when I begin and exactly when I stop and I don't have to do overtime, as I can estimate precisely when I will have completed what." (German respondent, ID 328)

Two British respondents also remarked that the usage of computers led to an increased productivity. For example, respondent 368 explained that she *"was more productive so [I] didn't have to spend longer than needed on work."* Further reasons that were mentioned (by one respondent each) were the change to tasks that are not computer related and a decreasing workload. One response was unusable and one British respondent provided a "Don't know" response.

| Decrease                     | British respondents (n=9) | German respondents (n=3) |
|------------------------------|---------------------------|--------------------------|
| Flexibility and independence | 2                         | 3                        |
| Productivity                 | 2                         | -                        |
| Workload                     | 1                         | -                        |
| Non-computer tasks           | 1                         | -                        |
| Unusable response            | 1                         | -                        |
| Don't know                   | 1                         | -                        |

**Recommendations:**

**Question:** The respondents seem to understand this question. However, we would like to recommend changing the syntax of the German version. In order to clarify the focus of the question for the respondents, it is necessary to ask the main question in the question stem:

**"Haben sich in den letzten 12 Monaten durch die Nutzung von Computern, Laptops, Smartphones und anderer computergesteuerter Ausstattung die folgenden Stellenmerkmale bei ihrer Arbeit erhöht, verringert, oder sind sie unverändert geblieben?"**

In addition, we recommend replacing the term „Stellenmerkmale" with "Arbeitsplatzmerkmale." This term is more appropriate and it has the benefit that the phrase "bei der Arbeit" [at work] is no longer necessary:

**"Haben sich in den letzten 12 Monaten durch die Nutzung von Computern, Laptops, Smartphones und anderer computergesteuerter Ausstattung die folgenden Arbeitsplatzmerkmale erhöht, verringert, oder sind sie unverändert geblieben?"**

**Answer categories:** No changes recommended.



**Tested question:**

English version:

**Q10** In the last 12 months, did the usage of computers, laptops, smartphones, or other computerised equipment have a positive or a negative effect on your work-life balance, if any?

☐ A positive effect  
☐ A negative effect  
☐ No relevant change

German version:

**Q10** Hatte die Nutzung von Computern, Laptops, Smartphones und anderer computergesteuerter Ausstattung während der letzten 12 Monate einen positiven oder einen negativen Effekt auf Ihre Work-Life-Balance, wenn überhaupt?

☐ Positiver Effekt  
☐ Negativer Effekt  
☐ Keine relevante Veränderung

**Frequency distribution of English speaking respondents (N=61)**

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| A positive effect      | 25                 | 40.98 |
| A negative effect      | 2                  | 3.28  |
| No relevant change     | 34                 | 55.74 |
| <i>Nonresponse</i>     | -                  | -     |

**Frequency distribution of German speaking respondents (N=58)**

| Answer German version       | No. of respondents | %     |
|-----------------------------|--------------------|-------|
| Positiver Effekt            | 17                 | 29.31 |
| Negativer Effekt            | 4                  | 6.90  |
| Keine relevante Veränderung | 37                 | 63.79 |
| <i>Antwortverweigerung</i>  | -                  | -     |

**Cognitive techniques:**

General Probing.

Probe 12: English version:

Please describe the most important positive changes you have experienced thanks to the usage of computers or similar devices.

Probe 12: German version:

Bitte beschreiben Sie die wichtigsten positiven Veränderungen, die Sie aufgrund der Nutzung von Computern oder ähnlichen Geräten erfahren haben.

Probe 13: English version:

Please describe the negative changes you have experienced due to the usage of computers or similar devices.

Probe 13: German version:

Bitte beschreiben Sie die wichtigsten negativen Veränderungen, die Sie aufgrund der Nutzung von Computern oder ähnlichen Geräten erfahren haben.

**Intentions:**

The intention of Probe 12 was to check whether what was perceived as positive changes by respondents is included in the scope of the answer options of questions Q9 and Q10.

The intention of Probe 13 was to check whether what was perceived as negative changes by respondents is included in the scope of the answer options of questions Q9 and Q10.

**Findings:**

Question Q10 asked respondents whether the usage of computers, laptops, smartphones, or other computerised equipment had a positive or a negative effect on their work-life balance in the last 12 months. Respondents could choose between the answer categories "A positive effect," "A negative effect," and "No relevant change." All categories were exclusive categories and, therefore, percentages add up to 100 percent. The majority of German respondents (63.79 percent) and of British respondents (55.74 percent) stated that there had been no relevant changes to their work-life balance due to the usage of computers, laptops, smartphones or other computerized equipment in the last 12 months. More English-speaking respondents (40.98 percent) than German-speaking respondents (29.31 percent) answer that the usage of computers and similar devices has had a positive effect on their work-life balance. In contrast, 4 Germans (6.90 percent) and 2 Britons (3.28 percent) report that there had been a negative effect.

Only respondents that selected the response "Yes" at Q1 received question Q10. As a consequence, 26 respondents (14 English speaking respondents and 12 German speaking respondents) did not receive this question due to the filter in question Q1. Depending on their answer selection at question Q10, respondents either received Probe 12, Probe 13, or no probe at all for this question. Respondents who selected the answer category "A positive effect" were asked Probe 12 (25 British respondents and 17 German respondents) whereas respondents who chose the answer category "A negative effect" (2

British respondents, 4 German respondents) received Probe 13. If a respondent opted for the answer category "No relevant change," the respondent was not probed further at this question.

### Findings Probe 12:

The intention of Probe 12 was to assess what was perceived as a **positive** change by respondents is included in the scope of the answer options of questions Q9 and Q10. Therefore, Probe 12 asked the respondents to describe the most important positive changes that they have experienced thanks to the usage of computers or similar devices. As multiple coding was employed, numbers do not add up to 100 percent.

The respondents who felt that there had been a positive effect on their work-life balance listed a number of improvements in their job characteristics. Some claimed that due to the usage of computers and similar devices, they were able to complete their work faster (British respondents: 44.00 percent of, German respondents: 41.18 percent). Here are some responses that fell in this category:

- "Everything is done somewhat more quickly and easily when many things are networked and you can draw on saved resources." (German respondent, ID 54)
- "[There is] less time spent on repetitive tasks which are now automated by the computer software." (British respondent, ID 47)
- "With the new systems in operation we have had to do less manual work [...] It made us able to work faster in finding information and storing." (British respondent, ID 101)
- "The use of computers enables me to get my work done quicker and helps me to improve the accuracy of my work." (British respondent, ID 152)

Respondents also remarked that their tasks became easier (British respondents: 8.00 percent of, German respondents: 23.53 percent). For example, respondent 339 (German) pointed out that the usage of computers led to a "*simplification of work processes and resulting time-saving*." Two respondents added that their work became more effectively (1 British and 1 German respondent). Similarly, some respondents pointed out that they were now more productive (2 British respondents) or more accurate at work (1 British respondents). Other respondents listed positive changes such as less manual work, less paper work, or a reduced number of work steps (British respondents: 16.00 percent of, German respondents: 17.65 percent). Respectively, one German and one British respondent stated that their time-management at work had become more efficient. Three English-speaking respondents now enjoyed their work more, while one German respondent mentioned that he felt more comfortable at work nowadays. Some respondents listed the implementation of networking solutions (British respondent: 4.00 percent of, German respondents: 23.53 percent) and gaining skills, knowledge (2 British respondents) or clients as positive changes (1 British respondent, 1 German respondents). Three responses were unusable.

What is remarkable is that very few of these respondents (4 out of 42) also stated explicitly, how these changes in their work life impacted their work-life balance. However, we do not believe that this is a problem because it is reasonable to assume that changes like the ones portrayed here might lead to a better work-life balance.

| Positive changes   | British<br>respondents<br>(n=25) (%) | German<br>respondents<br>(n=17) (%) |
|--|--------------------------------------|-------------------------------------|
| Faster   | 11 (44.00)                           | 7 (41.18)                           |
| Easier   | 2 (8.00)                             | 4 (23.53)                           |
| More effective   | 1 (4.00)                             | 1 (5.89)                            |
| More productive  | 2 (8.00)                             | -                                   |
| More accurate  | 1 (4.00)                             | -                                   |
| Automatization (e.g., less manual work, less paper work, reduced number of work steps) | 4 (16.00)                            | 3 (17.65)                           |
| More efficient time-management   | 1 (4.00)                             | 1 (5.89)                            |
| More enjoyable work  | 3 (12.00)                            | -                                   |
| Better wellbeing   | -                                    | 1 (5.89)                            |
| Networking solutions (e.g. Cloud systems)  | 1 (4.00)                             | 4 (23.53)                           |
| Gaining knowledge/developing skills  | 2 (8.00)                             | -                                   |
| Gaining clients  | 1 (4.00)                             | 1 (5.89)                            |
| Unusable response  | 2 (8.00)                             | 1 (4.00)                            |
| Explicit reference to work-life balance  | 3 (12.00)                            | 1 (5.89)                            |

### Findings Probe 13:

Similar to Probe 12, the intention of Probe 13 was to check whether what was perceived as a **negative** change by respondents is included in the scope of the answer options of questions Q9 and Q10. Probe 13 encouraged the respondents to describe the most important negative changes that they have experienced thanks to the usage of computers or similar devices.

Due to the answer selection at question Q10, only two British respondents and four German respondents received this probe. Two of the German respondents had issues with their constant accessibility due to the usage of computers or similar devices. For example respondent 51 remarked that "*with electronic devices, your employer can reach you almost around the clock.*" In a similar vein, respondent 340 pointed out that he has "*become accustomed to checking my business mailbox in bed and again in the morning.*" One respondent felt that he was sitting at the device too much and there was too little personal communication among colleagues. One German respondent complained about the increased complexity of tasks: "*I have the feeling that work assignments have become more complicated and more time-consuming due to increasing digitalization.*"

Further negative changes that the respondents named were the distraction due to the presence of social media platforms and inferior time-management. For example, respondent 330 (British) noted that "*there is anxiety about never getting enough done, I spend a lot more time on my computer than I do actually achieving things. It would be better to turn it off at 5pm and on the weekends.*" There was one unusable response.

| Negative changes                              | British respondents (n=2) | German respondents (n=4) |
|---|---------------------------|--------------------------|
| Constant accessibility                        | -                         | 2                        |
| Less interpersonal communication              | -                         | 1                        |
| Tasks more complex and time-consuming         | -                         | 1                        |
| Distractibility due to social media platforms | -                         | 1                        |
| Worse time-management                         | 1                         | -                        |
| Unusable response                             | 1                         | -                        |
| Explicit reference to work-life balance       | 1                         | 2                        |

#### Recommendations:

Question: The probe results potentially indicated that respondents do not answer the question with regard to their work-life balance. We would recommend underlining the term 'work-life balance' in the question to emphasize the intention of the question:

"In the last 12 months, did the usage of computers, laptops, smartphones, or other computerised equipment have a positive or a negative effect on your work-life balance, if any?"

"Hatte die Nutzung von Computern, Laptops, Smartphones und anderer computergesteuerter Ausstattung während der letzten 12 Monate einen positiven oder einen negativen Effekt auf Ihre Work-Life-Balance oder gab es keine Veränderung?"

Answer categories: No changes recommended.

**Tested question:**

English version:

**R1. Have you undergone any of the following learning activities to improve your digital skills during the past 12 months?**

*Please tick all that apply*

- ☐ Training courses paid by yourself
- ☐ Training courses paid or provided by your employer
- ☐ Training courses paid or provided by public programs or organisations other than your employer
- ☐ On-the-job training (e.g. co-workers, supervisors)
- ☐ Self-study using free online courses

German version:

**R1. Haben Sie in den letzten 12 Monaten an einer der folgenden (Weiter-) Bildungs/Trainingsmaßnahmen zur Verbesserung Ihrer digitalen Kenntnisse teilgenommen?**

*Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an*

- ☐ Bildungskurs(e), selbst bezahlt
- ☐ Bildungskurs(e), bezahlt durch den Arbeitgeber
- ☐ Bildungskurs(e) bezahlt oder organisiert durch öffentliche Programme oder Organisationen (andere als der Arbeitgeber)
- ☐ Ausbildung am Arbeitsplatz (z.B. durch Kollegen, Vorgesetzte)
- ☐ Selbststudium durch Nutzung kostenloser Online-Kurse

**Frequency distribution of English speaking respondents (N=75)**

| Answer English version  | No. of respondents | %     |
|---|--------------------|-------|
| a) Training courses paid by yourself  | 6                  | 8.00  |
| b) Training courses paid or provided by your employer   | 15                 | 20.00 |
| c) Training courses paid or provided by public programs or organisations other than your employer | 4                  | 5.33  |
| d) On-the-job training (e.g. co-workers, supervisors)   | 16                 | 21.33 |
| e) Self-study using free online courses   | 11                 | 14.67 |
| <i>Nonresponse</i>  |                    |       |

### Frequency distribution of German speaking respondents (N=70)

| Answer German version  | No. of respondents | %     |
|--|--------------------|-------|
| a) Bildungskurs(e), selbst bezahlt   | 3                  | 4.29  |
| b) Bildungskurs(e), bezahlt durch den Arbeitgeber  | 12                 | 17.14 |
| c) Bildungskurs(e) bezahlt oder organisiert durch öffentliche Programme oder Organisationen (andere als der Arbeitgeber) | -                  | -     |
| d) Ausbildung am Arbeitsplatz (z.B. durch Kollegen, Vorgesetzte)   | 6                  | 8.57  |
| e) Selbststudium durch Nutzung kostenloser Online-Kurse  | 12                 | 17.14 |
| Antwortverweigerung  | -                  | -     |

### Cognitive techniques:

Specific Probing.

Probe 14: English version:

In the previous list, did you miss any further relevant type of learning activities that you have undertaken? If so, please describe them.

Probe 14: German version:

Fehlen in der vorherigen Liste weitere relevante (Weiter)bildungs- oder Trainingsmaßnahmen, die Sie bereits besucht haben? Wenn ja, welche? Bitte beschreiben Sie diese kurz.

### Intention:

The intention of Probe 14 was to assess whether question R1 captures the full range of possible learning activities to improve digital skills and to evaluate whether any activities are missing.

### Findings:

Question R1 asked respondents whether they have undergone any of the listed learning activities to improve their digital skills during the past 12 months. The listed learning activities were: "Training courses paid by yourself," "Training courses paid or provided by your employer," "Training courses paid or provided by public programs or organisations other than your employer," "On-the-job training (e.g. co-workers, supervisors)," and "Self-study using free online courses." Respondents were asked to tick all answer categories that apply and, therefore, percentages do not necessarily add up to 100 percent.

All respondents (n=145) received question R1. Only a minority of respondents reported that they have undergone training courses that they paid by themselves (British respondents: 8.00 percent, German respondents: 4.29 percent) whereas around one fifth of the British respondents and German respondents had undergone training courses which were paid or provided by their employer. A few British respondents indicated that they had taken a training course that was paid or provided by public programs or organizations other than their employer (British respondents: 5.33 percent). None of the German respondents chose this answer category. In total, 21.33 percent of English-speaking respondents and 8.57 percent of German-speaking respondents had undergone on-the-job training. Lastly,

14.67 percent of English-speaking respondents as well as 17.14 percent of German-speaking respondents reported that they have used free online courses for self-study.

The intention of Probe 14 was to assess whether question R1 captures the full range of possible learning activities to improve digital skills and to evaluate whether any activities are missing in this list. Therefore, we asked the respondents whether they were missing any further relevant type of learning activities that they have undertaken and encouraged them to describe these activities. A few respondents wrote specific course topics, such as Microsoft Excel or CLAiT (computer literacy and information technology) courses (British respondents: 5.33 percent, German respondents: 1.43 percent) or further specified the course type (British respondents: 8.00 percent, German respondents: 1.43 percent). For example two respondents (1 British respondent, 1 German respondent) indicated that they took a webinar. These respondents could not necessarily select answer option Q6e) ("Self-study using free online courses") since these webinars might not have been free. In a similar vein, two British respondents mentioned that they self-educated by acquiring knowledge through websites. For example, respondent 366 wrote: *"I have just gained knowledge myself by finding websites etc."* These respondents also could not select answer option Q6e) since these respondents used websites instead of online courses to improve their digital skills. One German respondent listed training courses offered by their employer's insurance agency. However, the majority of respondents (British respondents: 85.33 percent, German respondents: 94.29 percent) answered that they did not miss any digital activity in the list of question R1. Given the high percentage of respondents that could not name any further learning activity, the list of learning activities of question R1 seems to be exhaustive.

#### Findings Probe 14:

| Further types of learning activities | British respondents<br>(n=75)(%) | German respondents<br>(n=70)(%) |
|--------------------------------------|----------------------------------|---------------------------------|
| Course topic                         | 4 (5.33)                         | 1 (1.43)                        |
| Course type                          | 6 (8.00)                         | 1 (1.43)                        |
| Organizing unit                      | -                                | 1 (1.43)                        |
| No/none/no further                   | 64 (85.33)                       | 66 (94.29)                      |
| Unintelligible response              | 1 (1.33)                         | 1 (1.43)                        |



**Recommendations:**

Question: No changes recommended.

Answer categories: Answer category R1e) might have a too narrow scope. Respondents stated that they had used online courses but that these courses were not free of charge and some respondents used websites for training activities instead of online courses. These respondents are not covered by the answer category R1e).

Therefore, we recommend deleting the term "free" ["kostenlos"] in this sentence to increase the scope of this category. The answer category R1e) should be phrased as follows:

English version: "Self-study using online courses"

German version: "Selbststudium durch Nutzung von Online-Kursen"

In addition, we recommend substituting the term "Bildungskurse" with "Weiterbildungskurse" in the German version. The term "Bildungskurse" does not really exist in the German language.

Tested question:

English version:

|  |
|--|
| <p><b>R2. In which of the following domains did you undertake the training?</b></p> <p><i>Please tick all that apply</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> The specific software applications I have to use at work (e.g. office suites, accounting software inventory management, internal planning software, etc.)</li><li><input type="checkbox"/> Online marketing and e-Commerce techniques</li><li><input type="checkbox"/> Social media for cooperation with colleagues or external partners (e.g. google groups, facebook, Jive)</li><li><input type="checkbox"/> Programming languages, including design and management of websites</li><li><input type="checkbox"/> Data analysis, business intelligence and management of databases</li><li><input type="checkbox"/> Maintenance of computer networks, servers, websites, security functionalities</li><li><input type="checkbox"/> Cyber security and privacy management</li><li><input type="checkbox"/> Other</li></ul> |
|--|

German version:

|   |
|---|
| <p><b>R2. In welchen der folgenden Themengebiete haben Sie an den Bildungsmaßnahmen teilgenommen?</b></p> <p><i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Spezifische Software-Anwendungen, die Sie am Arbeitsplatz nutzen (z.B. Office, Buchhaltung, Inventar-Management, interne Planungssoftware, usw.)</li><li><input type="checkbox"/> Online-Marketing und elektronischer Handel/Geschäftsverkehr</li><li><input type="checkbox"/> Soziale Netzwerke für die Zusammenarbeit mit Kollegen oder externen Partnern (z.B. Google Groups, Facebook, Jive)</li><li><input type="checkbox"/> Programmiersprachen, einschl. der Gestaltung und Verwaltung von Webseiten</li><li><input type="checkbox"/> Datenanalyse, Business Intelligence und Verwaltung von Datenbanken</li><li><input type="checkbox"/> Wartung von Computer-Netzwerken, Servern, Webseiten, Sicherheitsfunktionen</li><li><input type="checkbox"/> Cyber-Sicherheit und Datenschutz-Management</li><li><input type="checkbox"/> Andere</li></ul> |
|---|

#### Frequency distribution of English speaking respondents (N=35)

| Answer English version   | No. of respondents | %     |
|--|--------------------|-------|
| a) The specific software applications I have to use at work (e.g. office suites, accounting software inventory management, internal planning software, etc.) | 22                 | 62.86 |
| b) Online marketing and e-Commerce techniques  | 5                  | 14.29 |
| c) Social media for cooperation with colleagues or external partners (e.g. google groups, facebook, Jive)  | 5                  | 14.29 |
| d) Programming languages, including design and management of websites  | 5                  | 14.29 |
| e) Data analysis, business intelligence and management of databases  | 6                  | 17.14 |
| f) Maintenance of computer networks, servers, websites, security functionalities   | 2                  | 5.71  |
| g) Cyber security and privacy management   | 5                  | 14.29 |
| h) Other   | 4                  | 11.43 |
| <i>Nonresponse</i>   | -                  | -     |

#### Frequency distribution of German speaking respondents (N=25)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| a) Spezifische Software-Anwendungen, die Sie am Arbeitsplatz nutzen (z.B. Office, Buchhaltung, Inventar-Management, interne Planungssoftware, usw.) | 11                 | 44.00 |
| b) Online-Marketing und elektronischer Handel/Geschäftsverkehr  | 4                  | 16.00 |
| c) Soziale Netzwerke für die Zusammenarbeit mit Kollegen oder externen Partnern (z.B. Google Groups, Facebook, Jive)                                | 2                  | 8.00  |
| d) Programmiersprachen, einschl. der Gestaltung und Verwaltung von Webseiten  | 2                  | 8.00  |
| e) Datenanalyse, Business Intelligence und Verwaltung von Datenbanken   | 1                  | 4.00  |
| f) Wartung von Computer-Netzwerken, Servern, Webseiten,   | 1                  | 4.00  |
| g) Cyber-Sicherheit und Datenschutz-Management  | 1                  | 4.00  |
| h) Andere   | 8                  | 32.00 |
| <i>Antwortverweigerung</i>  | -                  | -     |

#### Cognitive techniques:

Specific Probing.

Probe 15: English version:

The training you have undertaken did not match any of the domains listed in the previous question.

Please describe the type of training you took.

Probe 15: German version:

Die von Ihnen belegten (Weiter)bildungs- oder Trainingsmaßnahmen gehörten nicht zu einem der vorherigen genannten Themengebiete.

Bitte benennen Sie das Themengebiet der von Ihnen belegte(n) Maßnahme(n).

#### Intention:

The intention of question R2 was to map the main types of digital skills workers have been trying to acquire. Probe 15 had the goal to assess whether the proposed answer options of question R2 are well understood and to evaluate whether they cover the majority of real cases.

#### Findings:

Question R2 asked the respondents in which of the listed domains they undertook the training that was selected in question R1. Respondents could choose between the answer categories "The specific software applications I have to use at work (e.g. office suites, accounting software inventory management, internal planning software, etc.)," "Online marketing and e-Commerce techniques," "Social media for cooperation with colleagues or external partners (e.g. google groups, facebook, Jive)," "Programming languages, including design and management of websites," "Data analysis, business intelligence and management of databases," "Maintenance of computer networks, servers, websites, security functionalities," "Cyber security and privacy management," and "Other." The respondents were prompted to check all answer options that apply to them, therefore the percentages do not add up to 100. In total, 22 of the English speaking respondents (62.86 percent) and 11 of the German speaking respondents (44.00 percent) had been trained in the specific software applications they use at work. 14.29 percent of the British respondents and 16.00 percent of the German respondents had undertaken training in the domain of online marketing and e-commerce techniques. When it comes to the use of social media, 14.29 percent of the surveyed Britons and 8.00 percent of the German respondents had undertaken training. Five British participants (14.29 percent) and two German participants (8.00 percent) had been trained in the domain of programming languages. "Data analysis, business intelligence and management of databases" is a domain in which six British respondents and one German respondent have undertaken training. Two British participants and one German participant had been trained in the field of "maintenance of computer networks, servers, websites, security functionalities." Lastly, five of the British respondents (14.29 percent) and one German respondent (4.00 percent) were trained in "cyber security and privacy management."

Only respondents who had indicated that they had undertaken training in the past 12 months in question R1 received question R2 (35 English speaking respondents, 25 German speaking respondents). In addition, only respondents who selected the answer category "Other" were asked Probe 15. Therefore, four British and eight German respondents received to Probe 15.

The intention of Probe 15 was to assess whether the proposed answer options of question R2 are well understood and to evaluate whether they cover the majority of real cases. Probe 15 asked respondents that selected the answer option "other" at question R2 to describe the type of training they had undertaken. The fact that around one third of the German respondents received this probe might be a sign that the list of domains of question R2 might not be exhaustive enough. The respondents listed a wide variety of training domains in their answers. The German respondents mentioned the domains of general safety training, business psychology, customer service, languages, and networking within the workplace (one respondent each). The British respondents thought of internal training, personal development as a team leader, social care, and topics related to social sciences (one respondent each). One German respondent stated that there had been no particular topic. Two respondents (both German) refused to answer.

#### Findings Probe 15:

| Further domains of training           | British respondents (n=4) | German respondents (n=8) |
|---------------------------------------|---------------------------|--------------------------|
| General safety training               | -                         | 1                        |
| Business psychology                   | -                         | 1                        |
| Customer service                      |                           | 1                        |
| Networking within the workplace       | -                         | 1                        |
| Internal training                     | 1                         | -                        |
| Languages                             | -                         | 1                        |
| Personal development as a team leader | 1                         | -                        |
| Social care                           | 1                         | -                        |
| Topics related to social sciences     | 1                         | -                        |
| No particular topic                   | -                         | 1                        |
| Refusal                               | -                         | 2                        |

#### Recommendations:

Question: No changes recommended.

Answer categories: There seem to be several domains that are not covered by the list of question R2.

As the range of possible additional domains is too large, we recommend including an open-ended "other" question (other, please specify:\_\_\_\_\_).

## 6 Frequency distributions of the remaining questions

English version:

Z1. What is your employment situation?

German version:

Z1. Welche Lebenssituation trifft derzeit überwiegend auf Sie zu?

### Frequency distribution of English speaking respondents (N=75)

| Answer English version   | No. of respondents |       |
|--|--------------------|-------|
| Employee   | 49                 | 65.33 |
| Self-employed (incl. family workers)   | 26                 | 34.67 |
| Unemployed   | -                  | -     |
| Student (not working)  | -                  | -     |
| Other categories not in the labour force (retired, inactive, in compulsory military service, etc.) | -                  | -     |
| <i>Nonresponse</i>   | -                  | -     |

### Frequency distribution of German speaking respondents (N=70)

| Answer German version   | No. of respondents |       |
|---|--------------------|-------|
| Erwerbstätig als Angestellte/-r, Arbeiter/-in, Beamten/Beamtin, Auszubildende/-r  | 41                 | 58.57 |
| Erwerbstätig als Selbstständige/-r, Landwirt/-in, mithelfende/-r Familienangehörige/-r  | 29                 | 41.43 |
| Arbeitslos  | -                  | -     |
| Schüler/-in, Student/-in (nicht erwerbstätig)   | -                  | -     |
| Aus anderen Gründen nicht erwerbstätig (zB. im Ruhestand oder Vorruhestand, dauerhaft erwerbsunfähig, im freiwilligen Wehrdienst oder Bundesfreiwilligendienst ...) | -                  | -     |
| <i>Antwortverweigerung</i>  | -                  | -     |

English version:

Z2. Is your main paid job...?

German version:

Z2. Arbeiten Sie in Ihrer Haupterwerbstätigkeit in Vollzeit oder Teilzeit?

Frequency distribution of English speaking respondents (N=75)

| Answer English version | No. of respondents | %     |
|------------------------|--------------------|-------|
| Full time              | 51                 | 68.00 |
| Part time              | 24                 | 32.00 |
| <i>Nonresponse</i>     | -                  | -     |

Frequency distribution of German speaking respondents (N=70)

| Answer German version      | No. of respondents | %     |
|----------------------------|--------------------|-------|
| Vollzeit                   | 54                 | 77.14 |
| Teilzeit                   | 16                 | 22.86 |
| <i>Antwortverweigerung</i> | -                  | -     |

English version:

Z3. Are you with a...?

German version:

Z3. Ist Ihr Arbeitsvertrag oder Ihre Tätigkeit befristet?

Frequency distribution of English speaking respondents (N=49)

| Answer English version                          | No. of respondents | %     |
|---|--------------------|-------|
| Permanent job or contract of unlimited duration | 45                 | 91.84 |
| Temporary job or contract of limited duration   | 4                  | 8.16  |
| <i>Nonresponse</i>                              | -                  | -     |

Frequency distribution of German speaking respondents (N=41)

| Answer German version      | No. of respondents | %     |
|----------------------------|--------------------|-------|
| Nein, unbefristet          | 33                 | 80.49 |
| Ja, befristet              | 8                  | 19.51 |
| <i>Antwortverweigerung</i> | -                  | -     |

English version:

Z4. What is the economic sector of your main paid job?

German version:

Z4. In welcher Branche arbeiten Sie (Hauptbeschäftigung)?



**Frequency distribution of English speaking respondents (N=75)**

| <b>Answer English version</b>  | <b>No. of respondents</b> | <b>%</b> |
|--|---------------------------|----------|
| Agriculture, forestry and fishing  | 1                         | 1.33     |
| Mining and quarrying, manufacturing and other industry                             | 2                         | 2.67     |
| Construction   | 2                         | 2.67     |
| Wholesale and retail trades, transport, accommodation and food service activities  | 8                         | 10.67    |
| Information and communication  | 11                        | 14.67    |
| Financial and insurance activities   | 4                         | 5.33     |
| Real estate activities   | 2                         | 2.67     |
| Business services  | 4                         | 5.33     |
| Public administration, defence, education, human health and social work activities | 17                        | 22.67    |
| Other service activities   | 24                        | 32.00    |
| <i>Nonresponse</i>   | -                         |          |

**Frequency distribution of German speaking respondents (N=70)**

| <b>Answer German version</b>  | <b>No. of respondents</b> | <b>%</b> |
|---|---------------------------|----------|
| Landwirtschaft, Forstwirtschaft und Fischereiwesen                        | -                         | -        |
| Bergbau, Verarbeitende Industrie, andere Industriezweige                  | 2                         | 2.86     |
| Bausektor   | 2                         | 2.86     |
| Groß- und Einzelhandel, Transport, Gastgewerbe und Gastronomie            | 12                        | 17.14    |
| Informations- und Kommunikationstechnologie                               | 3                         | 4.29     |
| Finanz- und Versicherungswirtschaft                                       | 3                         | 4.29     |
| Grundstücks- und Wohnungswesen  | -                         | -        |
| Dienstleistungen für Unternehmen  | 14                        | 20.00    |
| Öffentliche Verwaltung, Verteidigung, Bildung, Gesundheit und Sozialwesen | 13                        | 18.57    |
| Andere Dienstleistungsgewerbe   | 21                        | 30.00    |
| <i>Antwortverweigerung</i>  | -                         | -        |

English version:

Have you passed any of the examinations on this list?  
Please choose the section into which your highest level of education falls.

German version:

Welchen höchsten allgemeinbildenden Schulabschluss haben Sie?

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version  | No. of respondents | %     |
|---|--------------------|-------|
| Skills for Life (including Basic Skills, Key Skills, Entry Level Certificates)  | 2                  | 2.67  |
| 1-4 GCSEs A*-C, GCSE Grades D-G, Short course GCSE, CSE Grades 2-5, GCS O-level Grades D-E or 7-9, Scottish Scottish Standard Grades 4-7, Scottish School Leaving Certificate - no grade, Scottish Access 1-3, Scottish Intermediate or GSVG Foundation level, Foundation Welsh Baccalaureate | 8                  | 10.67 |
| 5 or more GCSEs A*-C, CSE Grade 1, GCE O-level Grades A-C or 1-6  | 17                 | 22.67 |
| Scottish SCE Ordinary Bands A-C or Pass, Scottish Standard Grades 1-3 or Pass, School Certificate or Matriculation, certificate Lower Grade, SUPE Ordinary, Scottish Intermediate 1 (A grade), Scottish Intermediate 2, Intermediate Irish Junior Certificate, 1 A-level or equivalent        | 1                  | 1.33  |
| Vocational GCSE, SCOTVEC/SQA National certificate modules/National Courses, BTEC First Certificate  | 5                  | 6.67  |
| GNVQ Intermediate   | 2                  | 2.67  |
| 2 or more A-levels, S-levels, A2-level, Scottish Highers, Scottish SCE/SLC/SUPE at Higher Grade, Scottish Higher Sixth Year Studies/Advanced Higher Grade, Welsh Advanced Baccalaureate, Northern Ireland Senior Certificate  | 40                 | 53.33 |

### Frequency distribution of German speaking respondents (N=70)

| Answer German version  | No. of respondents | %     |
|--|--------------------|-------|
| Schüler/in   | -                  | -     |
| Von der Schule abgegangen ohne Hauptschulabschluss (Volksschulabschluss)                     | -                  | -     |
| Hauptschulabschluss (Volksschulabschluss)  | 7                  | 10.00 |
| Realschulabschluss (mittlere Reife)  | 25                 | 35.71 |
| Polytechnische Oberschule der DDR mit Abschluss der 8. oder 9. Klasse                        | -                  | -     |
| Polytechnische Oberschule der DDR mit Abschluss der 10. Klasse                               | 5                  | 7.14  |
| Fachhochschulreife, Abschluss einer Fachoberschule   | 6                  | 8.57  |
| Allgemeine oder fachgebundene Hochschulreife/Abitur (Gymnasium bzw. EOS, auch EOS mit Lehre) | 27                 | 38.57 |
| Einen anderen Schulabschluss   | -                  | -     |

English version:

And have you passed any of the examinations on this list?

Please choose the section into which your highest level of education falls.

### Frequency distribution of English speaking respondents (N=75)

| Answer English version  | No. of respondents | %    |
|---|--------------------|------|
| (Modern) Apprenticeship, Advanced (Modern) Apprenticeship, SVQ/NVQ/Key Skills Level 1 and 2, City and Guilds (Levels 1 to 3/Parts I - III), RSA/OCR Vocational or First Certificate/Diploma, Advanced Diploma, Edexcel/BTEC First Diploma | 4                  | 5.33 |
| Vocational A-level (AVCE), GCE Applied A-level, NVQ/SVQ Level 3   | 6                  | 8.00 |
| GNVQ/SNVQ Advanced, Edexcel/BTEC/BEC/TEC (General/Ordinary) National Certificate or Diploma (ONC/OND)   | 3                  | 4.00 |
| HE Access   | -                  | -    |
| Edexcel/BTEC/BEC/TEC - Higher National Certificate (HNC) or equivalent  | 4                  | 5.33 |
| Foundation Degree (FdA, FdSc etc)   | -                  | -    |

|  |    |       |
|--|----|-------|
| Nursing certificate, Teacher training, HE Diploma, Edexcel/BTEC/BEC/TEC - Higher National Diploma (HND), OCR/Guilds - Level 4/Full Technological/Part IV, NVQ/SVQ Level 4 or 5 or equivalent | -  | -     |
| 3-4 year University/CNAA first Degree (BA, BSc., BEd., BEng., etc)   | 23 | 30.67 |
| 5 year University/CNAA first Degree (MB, BDS, BV, etc)   | -  | -     |
| Masters Degree, M.Phil, Post-Graduate Diplomas and Certificates  | 19 | 25.33 |
| Ph.D, D.Phil or equivalent   | 3  | 4.00  |
| Any other qualification  | -  | -     |
| None of these  | 13 | 17.33 |

English version:

**C1. How often on average did you use the Internet in the last 3 months?**

*Please tick one answer option*

German version:

**C1. Wie oft haben Sie im Durchschnitt in den letzten 3 Monaten das Internet genutzt?**

*Bitte kreuzen Sie nur eine Antwortmöglichkeit an*

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version                      | No. of respondents | %     |
|---|--------------------|-------|
| a) Every day or almost every day            | 71                 | 97.33 |
| b) At least once a week (but not every day) | 1                  | 1.33  |
| c) Less than once a week                    | 1                  | 1.33  |
| <i>Nonresponse</i>                          | -                  | -     |

#### Frequency distribution of German speaking respondents (N=70)

| Answer German version                                    | No. of respondents | %      |
|--|--------------------|--------|
| a) Jeden Tag oder fast jeden Tag                         | 70                 | 100.00 |
| b) Mindestens einmal in der Woche (aber nicht jeden Tag) | -                  | -      |
| c) Weniger als einmal in der Woche                       | -                  | -      |
| <i>Antwortverweigerung</i>                               | -                  | -      |

English version:

**C2.** Did you use any of the following mobile devices to access the Internet away from home or work in the last 3 months?

*Please tick all that apply or the last answer option*

German version:

**C2.** Welche der folgenden Geräte haben Sie in den letzten 3 Monaten genutzt, um außerhalb Ihres Zuhauses / Ihres Arbeitsplatzes ins Internet zu gelangen?

*Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten bzw. "f" an*

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version   | No. of respondents | %     |
|--|--------------------|-------|
| a) Mobile phone (or smart phone) via mobile phone network  | 51                 | 68.00 |
| b) Mobile phone (or smart phone) via wireless network (e.g. WiFi)  | 51                 | 68.00 |
| c) Portable computer (e.g. laptop, tablet) via mobile phone network, using USB key or (SIM) card or mobile phone or smart phone as modem | 20                 | 26.67 |
| d) Portable computer (e.g. laptop, tablet) via wireless network (e.g. WiFi)  | 41                 | 54.67 |
| e) Other devices   | 13                 | 17.33 |
| f) I didn't access the internet via any mobile device away from home or work   | 11                 | 14.67 |
| <i>Nonresponse</i>   | -                  | -     |

## Frequency distribution of German speaking respondents (N=70)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| a) Mobiltelefon (Handy) oder Smartphone via Mobilfunknetz   | 54                 | 77.14 |
| b) Mobiltelefon (Handy) oder Smartphone via drahtloses Netzwerk (z.B. WLAN)   | 44                 | 62.86 |
| c) Tragbarer Computer (z.B. Laptop, Netbook, Tablet-PC) via Mobilfunknetz (mit USB-Stick oder Karte, z. B. integrierte SIM-Karte, mit Mobiltelefon oder mit Smartphone als Modem) | 21                 | 30.00 |
| d) Tragbarer Computer (z.B. Laptop, Tablet) via Mobilfunknetz über ein drahtloses Netzwerk (z.B. WLAN)  | 40                 | 57.14 |
| e) Ein anderes Gerät  | 7                  | 10.00 |
| f) Ich habe kein mobiles Gerät benutzt, um außerhalb meines Zuhauses / Arbeitsplatzes ins Internet zu gelangen.   | 7                  | 10.00 |
| <i>Antwortverweigerung</i>  | -                  | -     |

English version:

|   |
|---|
| <p><b>C3. For which of the following activities did you use the Internet in the last 3 months for private purpose?</b></p> <p><i>Please tick all that apply</i></p> |
|---|

German version:

|   |
|---|
| <p><b>C3. Für welche privaten Zwecke haben Sie in den letzten 3 Monaten das Internet genutzt?</b></p> <p><i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i></p> |
|---|

## Frequency distribution of English speaking respondents (N=75)

| Answer English version   | No. of respondents | %     |
|--|--------------------|-------|
| a) Sending / receiving e-mails   | 72                 | 96.00 |
| b) Telephoning over the internet / video calls (via webcam) over the internet (using applications, e.g. Skype, Facetime) | 35                 | 46.67 |

|   |    |       |
|---|----|-------|
| c) Participating in social networks (creating user profile, posting messages or other contributions to facebook, twitter, etc.) | 50 | 66.67 |
| d) Uploading self-created content (e.g. text, photos, music, videos, software, etc.) to any website to be shared                | 27 | 36.00 |
| e) Reading online news sites / newspapers / news magazines  | 64 | 85.33 |
| f) Seeking health-related information (e.g. injury, disease, nutrition, improving health, etc.)                                 | 41 | 54.67 |
| g) Finding information about goods or services  | 57 | 76.00 |
| h) Using services related to travel or travel related accommodation   | 45 | 60.00 |
| i) Looking for a job or sending a job application   | 31 | 41.33 |
| j) Selling of goods or services, e.g. via auctions (e.g. eBay)  | 33 | 44.00 |
| k) Internet Banking   | 55 | 73.33 |
| <i>Nonresponse</i>  | -  | -     |

#### Frequency distribution of German speaking respondents (N=70)

| Answer German version  | No. of respondents | %     |
|--|--------------------|-------|
| a) Senden oder Empfangen von E-Mails   | 70                 | 100   |
| b) Telefonieren über Internet oder Videotelefonate (Telefonate mit Webcam) über Internet führen (z. B. Skype, Facetime)                          | 22                 | 31.43 |
| c) Teilnahme an sozialen Netzwerken (z. B. ein Nutzerprofil erstellen, Mitteilungen oder andere Beiträge auf Facebook, Twitter, usw. einstellen) | 51                 | 72.86 |
| d) Hochladen eigener, selbst erstellter Inhalte auf Webseiten (z.B. Texte, Bilder, Fotos, Musik, Videos, Software, usw.)                         | 24                 | 34.29 |
| e) Lesen von Online-Nachrichten, Online-Zeitungen/-Zeitschriften   | 53                 | 75.71 |
| f) Suche nach Informationen zu Gesundheitsthemen (z. B. zu Verletzungen, Krankheiten, Ernährung, gesundheitsfördernden Maßnahmen )               | 48                 | 68.57 |
| g) Suche nach Informationen über Waren und Dienstleistungen  | 57                 | 81.43 |
| h) Reisedienstleistungen (z. B. zur Buchung von Fahrkar-   | 37                 | 52.86 |

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|   |    |       |
|---|----|-------|
| ten oder Unterkünften)  |    |       |
| i) Arbeitssuche (einschl. Versenden von Bewerbungen)                                  | 19 | 27.14 |
| j) Verkauf von Waren oder Dienstleistungen, z. B. durch Versteigerungen (z. B. e-Bay) | 34 | 48.57 |
| k) Internet-Banking / Online-Banking  | 55 | 78.57 |
| Antwortverweigerung   | -  | -     |

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English version:

|            |  |
|------------|--|
| <b>C4.</b> | <b>Have you conducted any of the following learning activities over the Internet for educational, professional or private purposes in the last 3 months?</b> |
|            | <i>Please tick all that apply</i>  |

German version:

|            |  |
|------------|--|
| <b>C4.</b> | <b>Haben Sie in den letzten 3 Monaten folgende Lerntätigkeiten zu Bildungs-, Berufs- oder privaten Zwecken über das Internet durchgeführt?</b> |
|            | <i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i>   |

#### Frequency distribution of English speaking respondents (N=75)

---

| Answer English version  | No. of respondents | %     |
|---|--------------------|-------|
| a) Doing an online course   | 17                 | 22.67 |
| b) Using online learning material other than a complete online course (e.g. audio-visual materials, online learning software, electronic textbooks) | 16                 | 21.33 |
| c) Communicating with instructors or students using educational websites/portals  | 4                  | 5.33  |
| Nonresponse   | -                  | -     |

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#### Frequency distribution of German speaking respondents (N=70)

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| Answer German version  | No. of respondents | %     |
|--|--------------------|-------|
| a) Online-Kurs absolviert  | 7                  | 10.00 |
| b) Online-Lernmaterial (keinen kompletten Online-Kurs) genutzt (z. B. audio-visuelles Material, Online-Lernsoftware, elektronische Textbücher) | 8                  | 11.43 |

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|   |   |      |
|---|---|------|
| c) mit Lehrkräften oder Studierenden über bildungsbezogene Webseiten / Portale kommuniziert | 4 | 5.71 |
| <i>Antwortverweigerung</i>  | - | -    |

English version:

|            |  |
|------------|--|
| <b>C5.</b> | <b>Have you used any website or app to arrange an accommodation (room, apartment, house, holiday cottage, etc.) from another individual in the last 12 months?</b> |
|            | <i>Please tick all that apply or 'No, I have not'</i>  |

German version:

|            |   |
|------------|---|
| <b>C5.</b> | <b>Haben Sie in den letzten 12 Monaten eine Website oder App genutzt, um bei einer Privatperson eine Unterkunft (z.B. Zimmer, Wohnung, Haus, Ferienhaus, usw.) zu buchen?</b> |
|            | <i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten bzw. 'Nein' an.</i>   |

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version                                     | No. of respondents | %     |
|--|--------------------|-------|
| a) Yes, dedicated websites or apps (such as AIRBNB)        | 31                 | 41.33 |
| b) Yes, other websites or apps (including social networks) | 18                 | 24.00 |
| c) No, I have not.   | 38                 | 50.67 |
| <i>Nonresponse</i>   | -                  | -     |

#### Frequency distribution of German speaking respondents (N=70)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| a) Ja, über eine darauf spezialisierte Internetseite oder App (z.B. AIRBNB) | 8                  | 11.43 |
| b) Ja, über andere Internetseiten oder Apps (einschl. sozialer Netzwerke)   | 11                 | 15.71 |
| c) Nein.  | 52                 | 74.29 |
| <i>Antwortverweigerung</i>  | -                  | -     |

English version:

E1. When did you last buy or order goods or services for private use over the Internet?

German version:

E1. Wann haben Sie zuletzt Waren oder Dienstleistungen für den privaten Gebrauch über das Internet gekauft/ bestellt?

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version          | No. of respondents | %     |
|---------------------------------|--------------------|-------|
| Within the last 3 months        | 66                 | 88.00 |
| Between 3 months and a year ago | 6                  | 8.00  |
| More than 1 year ago            | 2                  | 2.67  |
| Never bought or ordered         | 1                  | 1.33  |
| <i>Nonresponse</i>              | -                  | -     |

#### Frequency distribution of German speaking respondents (N=70)

| Answer German version                                     | No. of respondents | %     |
|---|--------------------|-------|
| Innerhalb der letzten 3 Monate                            | 59                 | 84.29 |
| Vor mehr als 3 Monaten, aber innerhalb des letzten Jahres | 5                  | 7.14  |
| Vor mehr als einem Jahr                                   | 3                  | 4.29  |
| Noch nie  | 3                  | 4.29  |
| <i>Antwortverweigerung</i>                                | -                  | -     |

English version:

|            |  |
|------------|--|
| <b>E2.</b> | <b>What types of goods or services did you buy or order over the Internet for private use in the last 12 months?</b> |
|            | <i>Please tick all that apply</i>  |

German version:

|            |   |
|------------|---|
| <b>E2.</b> | <b>Welchen der folgenden Waren oder Dienstleistungen haben Sie in den letzten 12 Monaten für den privaten Gebrauch über das Internet bestellt oder gekauft?</b> |
|            | <i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i>  |

#### Frequency distribution of English speaking respondents (N=72)

| Answer English version   | No. of respondents | %     |
|--|--------------------|-------|
| a) Food or groceries   | 32                 | 44.44 |
| b) Household goods (e.g. furniture, toys, etc.; excluding consumer electronics)  | 27                 | 37.50 |
| c) Medicine  | 6                  | 8.33  |
| d) Clothes, sports goods   | 48                 | 66.67 |
| e) Computer hardware   | 13                 | 18.06 |
| f) Electronic equipment (incl. cameras)  | 14                 | 19.44 |
| g) Telecommunication services (e.g. TV, broadband subscriptions, fixed line or mobile phone subscriptions, uploading money on prepaid phone cards, etc.) | 15                 | 20.83 |
| h) Holiday accommodation (e.g. hotel etc.)   | 36                 | 50.00 |
| i) Other travel arrangements (e.g. transport tickets, car hire, etc.)  | 31                 | 43.06 |
| j) Tickets for events  | 31                 | 43.06 |
| k) Films, music  | 15                 | 20.83 |
| l) Books, magazines, newspapers (including e-books)  | 29                 | 40.28 |
| m) e-learning material   | 2                  | 2.78  |
| n) Video games software, other computer software and software upgrades   | 11                 | 15.28 |
| o) Other   | 11                 | 15.28 |
| <i>Nonresponse</i>   | -                  | -     |

## Frequency distribution of German speaking respondents (N=64)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| a) Lebensmittel   | 12                 | 18.75 |
| b) Gebrauchsgüter (z. B. Möbel, Spielzeug) – nicht Unterhaltungselektronik  | 32                 | 50.00 |
| c) Arzneimittel   | 18                 | 28.13 |
| d) Kleidung, Sportartikel   | 41                 | 64.06 |
| e) Computer und Zubehör   | 24                 | 37.50 |
| f) Elektronikartikel (auch Kameras)   | 22                 | 34.38 |
| g) Telekommunikationsdienste (z.B. Abschluss von Breitband-, Festnetz- oder Handyverträgen, Aufladen von Prepaid-Karten für Handys) | 13                 | 20.31 |
| h) Urlaubsunterkünfte (z. B. Zimmerreservierung in Hotels)  | 26                 | 40.63 |
| i) Andere Dienstleistungen für Urlaubsreisen (z. B. Fahrkartenkauf oder Mietwagenbestellung)  | 15                 | 23.44 |
| j) Eintrittskarten  | 22                 | 34.38 |
| k) Filme, Musik   | 21                 | 32.81 |
| l) Bücher, Zeitungen, Zeitschriften (auch E-Books, elektronische Bücher)  | 28                 | 43.75 |
| m) E-Learning-Material  | 1                  | 1.56  |
| n) Computersoftware einschl. Computer- und Videospiele (auch Upgrades und Apps)   | 14                 | 21.88 |
| o) Andere   | 14                 | 21.88 |
| Antwortverweigerung   | -                  | -     |

English version:

|            |  |
|------------|--|
| <b>E3.</b> | <b>From whom did you buy or order goods or services for private purpose over the Internet in the last 12 months?</b> |
|            | <i>Please tick all that apply</i>  |

German version:

|            |   |
|------------|---|
| <b>E3.</b> | <b>Aus welchen Ländern haben Sie in den letzten 12 Monaten Waren oder Dienstleistungen für den privaten Gebrauch über das Internet gekauft/ bestellt?</b> |
|            | Hier ist das Land gemeint, in dem der Verkäufer der Waren und Dienstleistungen seinen Sitz hat  |
|            | <i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i>  |

#### Frequency distribution of English speaking respondents (N=72)

| Answer English version                       | No. of respondents |       |
|--|--------------------|-------|
| a) National sellers                          | 62                 | 86.11 |
| b) Sellers from other EU countries           | 20                 | 27.78 |
| c) Sellers from the rest of the world        | 21                 | 29.17 |
| d) Country of origin of sellers is not known | 6                  | 8.33  |
| Nonresponse                                  | -                  | -     |

#### Frequency distribution of German speaking respondents (N=64)

| Answer German version   | No. of respondents |       |
|---|--------------------|-------|
| a) Von nationalen Verkäufern  | 57                 | 89.06 |
| b) Von Verkäufern aus anderen Ländern der Europäischen Union            | 14                 | 21.88 |
| c) Von Verkäufern aus Ländern, die nicht zur Europäischen Union gehören | 14                 | 21.88 |
| d) Nicht bekannt  | 6                  | 9.38  |
| Nonresponse   | -                  | -     |

English version:

|   |
|---|
| <p><b>Q3. For your main paid job: Which of these portable devices (e.g. laptop, netbook, smartphone or tablet) do you use?</b></p> <p><i>Please tick all that apply</i></p> |
|---|

German version:

|  |
|--|
| <p><b>Q3. Für Ihre bezahlte Hauptbeschäftigung: Welche dieser tragbaren Geräte (z.B. Laptop, Netbook, Smartphone oder Tablet) verwenden Sie?</b></p> <p><i>Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an</i></p> |
|--|

#### Frequency distribution of English speaking respondents (N=61)

|   | Yes (%)    | No (%)     |
|---|------------|------------|
| Your own personal device                    | 39 (63.93) | 22 (36.07) |
| A portable device provided by your employer | 31 (50.82) | 30 (49.18) |
| <i>Nonresponse</i>                          | -          | -          |

#### Frequency distribution of German speaking respondents (N=58)

|   | Ja (%)     | Nein (%)   |
|---|------------|------------|
| Ihr eigenes persönliches Gerät                    | 33 (56.90) | 25 (43.10) |
| Ein von Ihrem Arbeitgeber bereit gestelltes Gerät | 27 (46.55) | 31 (53.45) |
| <i>Antwortverweigerung</i>                        | -          | -          |

English version:

**Q11. In which of the following locations, on average, do you spend the majority of your working time?**

*Please tick one answer value*

German version:

**Q11. An welchem der folgenden Orte verbringen Sie im Durchschnitt die meiste Arbeitszeit?**

*Bitte kreuzen Sie nur eine Antwortmöglichkeit an*

#### Frequency distribution of English speaking respondents (N=75)

| Answer English version  | No. of respondents | %     |
|---|--------------------|-------|
| a) Your employer's/your own business' premises (e.g. office, factory, shop, school, etc.)                                       | 40                 | 53.33 |
| b) Clients' premises or premises of business/commercial partners  | 6                  | 8.00  |
| c) Your own home  | 23                 | 30.67 |
| d) On the move, in a vehicle, an outside site (e.g. construction site, agricultural field, streets of a city) or public spaces. | 6                  | 8.00  |
| <i>Nonresponse</i>  | -                  | -     |

#### Frequency distribution of German speaking respondents (N=70)

| Answer German version   | No. of respondents | %     |
|---|--------------------|-------|
| a) In den Räumlichkeiten Ihres Arbeitgebers / in Ihrem eigenen Geschäft (z.B. Büro, Fabrik, Geschäft, Schule, usw.)               | 43                 | 61.43 |
| b) Bei Kunden vor Ort oder in Gebäuden von Unternehmen  | 3                  | 4.29  |
| c) In Ihrem eigenen Zuhause   | 16                 | 22.86 |
| d) Unterwegs, in einem Fahrzeug, im Freien (z.B. Baustelle, Acker oder Wiese, Straßen einer Stadt) oder auf öffentlichen Plätzen. | 8                  | 11.43 |
| <i>Antwortverweigerung</i>  | -                  | -     |

## 7 Glossary: Cognitive Techniques

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|                               |  |
|-------------------------------|--|
| Think Aloud                   | <i>„Please vocalize everything that comes to your mind while you answer the following question. Please also vocalize things that seem unimportant to you. The question is...“.</i>       |
| Comprehension Probing         | <i>„What would you say is a ‚representative democracy‘?“</i>   |
| Category Selection Probing    | <i>„You have just said that you strongly agree with this statement. Why did you select this answer?“</i>   |
| Information Retrieval Probing | <i>„How did you remember that you went to the doctor [...] times in the past 12 months?“</i>   |
| General/Elaborative Probing   | <i>„Can you please explain your answer a little further?“</i>  |
| Specific Probing              | <i>„You have just answered ‚yes‘ to this question. Does that mean that you have already done [...] or that you principally would do [...] if required, but have not yet done [...]?“</i> |
| Emergent Probing              | <i>„I noticed that you frowned when I read out the answer categories to you. Could you please tell me why you did that?“</i>   |
| Paraphrasing                  | <i>„Please repeat the question that I have just read out to you in your own words.“</i>  |
| Confidence Rating             | <i>„How sure are you that you went to the doctor [...] times in the past 12 months?“</i>   |